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EDITORIAL.

OF GOOD AUGURY.

There took place here, in New Orleans, what we forecast will be of great benefit to our hospitals in general and the Charity Hospital in particular.

This was simply what was termed a smoker, given by the members of the Board of Administrators of the Charity Hospital to the Chiefs of the Visiting Staff of the hospital. In parenthesis it might be said that the word "smoker" was used by the hosts, in their modesty, to denominate what proved to be a bountiful and delicious dinner. However, the repast itself was a mere incident; or, we might say paradoxically, the material part of the affair was immaterial. What counted was what was behind the cordial invitation and its cheerful acceptance; what will count still more is what should and, we believe, will come from the closer relationship between the administrative and the professional heads of the hospital.

This relationship heretofore has not been as it should. Years ago the hospital visiting staff organized, naming officers and a conference committee, informing the board of its action and its readiness to confer with the board upon the invitation of the latter, as the staff wished to indicate its lack of desire to intrude although prepared to advise or suggest in such matters as might be considered within their province. Following this, the board very politely acknowledged the communication and thus the matter stood—no conference was ever requested. Can it be possible that, during a term of years, nothing happened which could justify an interchange of ideas concerning the medical and surgical management, the technical side of the hospital?

It could not be said justly that there was antagonism between the board and the staff, but there was an undefinable something in the atmosphere which did not tend towards cordiality, an intangible feeling which did not encourage co-operation.

Now, what is more necessary for the efficient management of any hospital than co-operation? In one, like our Charity, not overburdened with revenue, it is all the more essential. Just as there must be team-work among the medical staff, on the one hand, and harmony among the members of the board, on the other, so must there be co-ordination and co-operation between the management and the staff.

The staff expressed its understanding of these principles a long time ago and now, at last, a hospital board has responded in the right spirit; in fact, has taken the initiative in cultivating the proper feeling between board and staff, because that was the purpose behind the smoker or dinner. It was a "get acquainted" and a "get together" movement. The members of the board deserve the greatest credit for this "gesture", as our French friends would put it, and it will succeed. The few little talks during the function gave evidence of complete and mutual understanding and appreciation. This feeling will develop and grow as opportunity for co-operation occurs and enlarges, and we see unlimited possibilities for increased efficiency, which means better care for the indigent sick and better training for the physicians.

RESTRICTIONS IN MEDICAL PRACTICE.

Resolutions recently passed at the annual meeting of the American Medical Editors' Association invite attention to the restrictions imposed by the Volstead Act, calling them "obstacles to the free pursuit of honest medical judgment." The point at issue is the right of the physician to select his remedies and to decide what doses of these remedies respective patients require.

This principle has nothing to do with the question of prohibition and the resolutions should not be considered as propaganda either for or against that measure. Prohibition is part of the organic law of the country and, like all other laws, should be either enforced or repealed, yet this fact should not prevent the preservation of the necessary rights of the physician in the interests of health and public policy.

We know of a number of physicians who have declined to qualify for the right to prescribe any alcoholics because of the onerous details accompanying the permission, but who, however, feel that they are thereby unduly restricted in the use of their therapeutic judgment.

It is but natural therefore, that the profession should, in the words of the Editors' Association, "protest against further undue regulation of therapeutic procedure by statutes or by administrative interpretation or regulation and request of the proper authorities a review and revision of such existing statutes or rules as may be unduly restrictive of the therapeutic procedure of physicians."

ORIGINAL ARTICLES.

(No paper published or to be published in any other medical journal will be accepted for this department. All papers must be in the hands of the Editors on the tenth day of the month preceding that in which they are expected to appear. Reprints may be had at reasonable rates if a WRITTEN order for the same accompany the paper.)

THE IMPORTANCE OF SECURING BONY UNION FOLLOWING FRACTURE OF THE PATELLA.*

BY E. DENEGRE MARTIN, F. A. C. S., NEW ORLEANS.

A report of the few cases I am presenting to-night dates back over a period of twenty-five years and is the result of a pretty thorough study of the knee joint and the many suggestions offered to restore its function after injury. In this article I shall confine myself to fractures of the patella. I cannot agree with some authors that this is a mere sesamoid bone and plays but a minor part in the function of the knee joint. This error no doubt arises from the fact that the legs are used most when erect and when in this position are easily flexed and extended; for ordinary purposes of walking this may be true but in order to obtain one hundred per cent efficiency the patella is an absolute necessity; why not, then, employ a technic in the restoration of function which will insure the greatest efficiency? I wish especially to stress the function, as well as the importance of preserving this function, by showing, if I can, that the patella plays a most important role in controlling and perfecting the movements of the knee joint.

The knee through a hinge or ginglymoid joint, has a peculiar sliding motion, which is so controlled by the crucial and lateral ligaments that some portion of the surface of the condyles is at all times in contact with the head of the tibia resting in the sulci formed by the semi-lunar cartilages. Extension is produced by contraction of the quadriceps extensor which forms the long arm of a lever of the first degree, the patella the fulcrum, the patella ligament the short arm. You will note from the skiagraph that these tendons and ligaments do not come in contact with the bone surfaces but are held apart from the condyles and head of the tibia by the patella and that no matter at what angle the leg is flexed the patella rests upon the condyles in such a way as to allow the greatest force to

*Read before the Orleans Parish Medical Society, March 14th, 1921.

be exerted through it as a fulcrum—that is, it is raised at the highest point above the surface, and of course the higher the fulcrum within certain limits the greater the force which can be applied to the leg. If therefore the patella did not exist and the tendon was continuous from the quadriceps to the tibial tubercle no forces possible by muscle contraction would be great enough to raise the leg if flexed on the thigh, when the slightest resistance was met, as for instance in a squatting position. If therefore the patella cannot be restored to its normal contour after fracture, the efficiency of the limb is impaired just in proportion to the dropping of the ends, that is, lowering of the fulcrum, or to the extent of scar tissue between the fragments, for the greater the separation the weaker the limb. What, therefore, does preservation of the normal position of the patella and bony union mean? One hundred per cent efficiency. The joint must be opened, the torn edges of the capsule removed from the opposing surfaces of the bone and the two bony surfaces brought into close and perfect apposition, and above all secured against refracture. The elaborate technic of Albee, Bricknell, Groves and others is unnecessary. The mere suturing of the capsule with catgut is not always to be depended upon, as shown by statistics. In 38 cases reported by Scudder only 81% showed complete union, 18% by bridge of bone, which means lowering the fulcrum, and 18% absolutely no bony union. These are about the results reported by others. Corner's statistics show that refracture occurs in from 69 to 89% in all cases within one year. No bony union means further separation of fragments or loss of power. Then, too, the limb must be secured by an external splint over an extended period. I have seen three cases give way after suture within three months of operation, one was not resutured but treated with a figure of 8 bandage and splint, and was nearly a year securing a serviceable limb and I do not think ever obtained complete flexion. The second was treated by me as will be described later. The third was resutured, but too recently to know the result. The technic I now wish to suggest for your consideration was adopted in five cases, perfect function was restored except in the last which is too recent to report, though the man is at work. An incision is made across the patella regardless of the line of fracture, the skin is retracted and all interposing tissue between the fragments of bone removed, a double vul-

cella is then hooked into the upper and lower fragments, one or more catgut sutures are placed on either side to hold the fragments of bone in perfect apposition and a piece of annealed wire, about No. 16, is then threaded on a heavy surgical needle and passed deep into the tendon above and as near the patella as possible, and through the ligament below in the same manner, the wire is then tightened across the top of the fragments, the ends twisted and buried. This acts as an internal splint, is easily applied and a guarantee against refracture. Further advantages lie in the fact that a splint need be applied for such time only as there is pain and swelling resulting from the operation. Patients can be put on crutches much earlier and after the first week allowed to begin motion in the knee, at the end of six weeks full flexion is possible. Where suture alone is employed the leg should be put up in a splint at an angle of 165°; when motion is begun it is done by extending the leg and not flexing, whereas if the leg is first put in a straight splint there is always danger of tearing the capsule, as adhesions about the joint give way suddenly and the force exerted is often sufficient to rupture the line of union in the soft tissues as ossification is not complete in this bone for several months.

Any surgeon who has looked into a refractured joint is easily convinced of the complicated pathology to be reckoned with and in these cases especially is the technic herein suggested applicable.

I will now show you skiagraphs of three of the five cases treated; the first two are one hundred per cent good, the last would be considered ordinarily a perfect result, but in my opinion dropping of the ends of the patella lowers the fulcrum and though the patient is satisfied and believes his leg is as good as before, I cannot agree with him; the result in this case is due to faulty technic and I am glad to be able to present it to you as you will learn the same lesson from failure that I have.

A comparison of these skiagraphs with others, where the suture alone was used will, I think, convince you of the merits of the operation.

A deeper bite into the tendon and ligaments should have been taken. Compare these with any where the catgut suture was used as to result and time of convalescence and I think you

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2
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will easily satisfy yourself as to the advantages of the wire splint.

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RECENT WORK ON THE INORGANIC CONSTITUENTS OF THE BLOOD AS RELATED TO INTERNAL MEDICINE.*

BY W. DENIS, M. D.

(From the Laboratory of Physiological Chemistry of the Tulane Medical School, New Orleans.)

More than a decade has passed since a description of the first of the so-called micro methods for the determination of the non-protein constituents of the blood was published, and, during the years which have elapsed since that time, this method of examination has become increasingly popular, until in many clinics determinations of blood sugar, fat, uric acid, creatinine, urea, etc., have become routine procedures. The phenomenal success of this method of investigation was in all probability due to the fact that there was presented for the first time a technique for the chemical examination of blood requiring little expenditure of time, relatively simple apparatus, and above all small amounts of blood. As long as the methods of blood analysis demanded 200 c. c. of blood and the expenditure of five hours of time on the part of the laboratory worker, as was the case in the early methods used for uric acid determinations, it is impossible to conceive of the general utilization of such technique in the clinic.

Inspired probably by the success of the above line of work, certain investigators have during the past five years turned their attention to a study of the inorganic constituents of the

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blood, with the object of working out methods for the quantitative determination of these substances which would be sufficiently simple to permit of use on clinical material. This study is still in its infancy, but the results so far obtained make it justifiable to predict that within a few years the clinician will require that in certain cases the blood examination include the determination of such constituents as calcium or phosphates with as great frequency as he now desires data on blood sugar or urea. The first step in the solution of any problem consists in the elaboration of experimental methods of an accuracy sufficient for the work in hand. In the case of several of the inorganic constituents of blood, up to a few months ago no experimental methods suitable for clinical work have been available. Among the constituents of this group may be mentioned, sodium, potassium and magnesium. Several analytical methods for the quantitative determinations of these elements in blood have recently been described[1], so that it is probable that we may soon possess more definite information regarding the distribution of these substances in the blood in pathological conditions.

As the matter stands at present our knowledge regarding magnesium in blood in pathological conditions is practically nil. As regards sodium and potassium the recent interesting experiments of McCann[2], of Mac Callum[3], and his collaborators, and of Hastings[4] and Murray, have made it extremely probable that at least some of the symptoms of pyloric obstruction are due to disturbed salt equilibrium as an increase in the alkaline reserve (and probably in the sodium and potassium concentration), and a marked decrease in the chloride concentration of the blood have been invariably noted in this disorder.

Several simple and accurate methods for the quantitative determination of chlorides in whole blood and plasma are now available and, as a result, our knowledge concerning chloride metabolism in disease is being rapidly increased. The connection between chloride retention and nephritic edema was first pointed out by the French school of internists, the names of Widal[5] and of Ambard[6] being especially associated with the early development of this subject. These investigators made use of blood analysis for the investigation of their cases, but while their views regarding the connection of abnormalities of chloride metabolism and certain types of edema

gained wide acceptance, the utilization of chloride determinations in blood as a practical clinical procedure gained general use in this country only after publication of the investigations of McLean[7]. During the past five years half a dozen micro methods for the determination of blood chlorides have been published[8], so that weapons for the attack are now available in abundance. As a result the utilization of blood chloride determinations for guidance in the feeding of nephritis has become popular. Modern work has corroborated the findings of Widal and of Ambard in their contention that the excretion of nitrogen and of chlorides are frequently independent functions of the kidney, and a preliminary determination of blood chlorides before the inauguration of a "salt free" diet in nephritic cases, together with subsequent observations made during treatment, would appear to offer the only method of determining whether the frequently irksome restriction in chloride intake is of real benefit to the patient. The fact has been frequently noted that in certain cases of nephritis the blood chlorides have (after long periods of "salt free" dietaries) been distinctly below normal.

Recently Allen[9] has suggested the possibility of a casual relation between chloride retention (as shown by increased plasma chloride) and certain cases of hypertension. Should further clinical observations prove the truth of this hypothesis the increased practical usefulness of the determination of blood chlorides is apparent.

Another inorganic constituent of blood which has lately been shown to be of considerable interest in certain pathological conditions is phosphorus. This element exists in the blood in four types of combination[10] viz., as inorganic phosphates as, for example, sodium or potassium phosphate; in lipoid form (lecithin); as nuclear protein; and in combination as the so-called "organic phosphates" which are believed to consist of or be allied to glycero phosphoric acid. So far only the inorganic phosphate has been investigated in connection with pathological material and discussion will therefore be limited to this fraction. The importance of blood phosphates in connection with the maintenance of the acid base equilibrium of the organism was first pointed out by L. J. Henderson[11]; later Greenwald[12] and Marriott and Howland[13] reported the presence of greatly increased amounts of inorganic phosphates

in the plasma in a few cases of nephritis. In 1920, Denis and Minot[14] found as the result of the study of a considerable number of blood samples that 65 per cent of nephritic and cardiorenal cases taken at random from the material available at that time in the wards of the Massachusetts General Hospital showed unmistakable evidence of phosphate retention. It was furthermore noted that fatal cases showed a rapid and progressive increase in plasma phosphate, increases of more than ten times the maximum normal value being not uncommon; on the other hand the non-fatal cases even though the patient was seriously ill presented a relatively slight increase.

It is of interest to note that there is no definite relation between the level of inorganic phosphate, non protein nitrogen and of the alkaline reserve. In several cases in which the alkaline reserve was extremely low, and the level of inorganic phosphate high, intravenous injection of sodium bicarbonate given in amounts sufficient to produce a distinct alkalosis was absolutely without effect on the level of the plasma phosphate. The results so far obtained would suggest the possible prognostic importance of the determination of inorganic phosphates in the plasma of persons suffering from nephritis or allied disorders.

The literature abounds with reports concerning the presence of abnormal amounts of calcium in the blood in a multitude of pathological conditions, and as a result the therapeutic administration of calcium salts has been advised as being of value in a host of diseases ranging from epilepsy to urticaria. A cursory glance over the work of these early investigators indicates at once the chemical impossibility of measuring blood calcium by the technique then employed. Of late years the developments in micro chemistry have brought forth several relatively accurate methods for the quantitative determination of small amounts of calcium[15], and as a result our knowledge concerning the level of blood calcium in disease has been placed on a firm foundation. So far no condition has been noted in which abnormally large amounts of calcium are found. It has been demonstrated however that in parathyroid tetany[16], pneumonia[17], acute rachitis[18] and uremia[19] there is a marked decrease in the calcium content of the plasma.

That the tetany of parathyroidectomized animals or of rachitic children, or the convulsions of uremics is due to a decreased

blood calcium alone is questionable. It would seem rather that such abnormal manifestations might result from a disturbance of the equilibrium between calcium and other inorganic electrolytes of the blood. The investigation of the problem from this standpoint must await the time when analytical methods are available which will permit the quantitative determination of all the inorganic constituents in a single relatively small sample of blood.

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DISCUSSION.

Dr. Allan Eustis: The Orleans Parish Medical Society is indeed fortunate in being able to hear from one who has been a pioneer in the development of the chemistry of the blood, and to whose work is due many of the present methods used in examining same.

I have had no personal experience in examining the inorganic constituents of the blood but I take this opportunity of discussing the methods used in determining the ammonia content of the blood, inasmuch as ammonia is included in inorganic chemistry. I wish to ask Dr. Denis whether she knows of any method whereby ammonia can be differentiated from the volatile amin as by the present method the latter will pass over into the standard acid and will be titrated as ammonia.

Dr. Parham: I may not be in order as Dr. Denis did not refer to this subject in her paper, but as Dr. Garrey in his discussion dwelt at length upon the influence of citrate of soda in the blood, I thought it might be interesting to call attention to recent investigations reported before the New York Academy of Medicine in which it was distinctly shown that although the citrate in vitro pre-

vented the coagulation of the blood, when introduced into the circulation it had a distinct effect upon the time coagulation, reducing it in a few minutes to less than 50%. The effect of this is so marked that it has a distinct use as a hemostatic, and in the absence of a donor of blood may be used in hemorrhage and hemorrhagic states as a very useful hemostatic. I would like to ask Dr. Garrey how he would explain this apparently paradoxical effect. The reader of the paper before the New York Academy of Medicine said that after considerable investigation he had come to the conclusion the effect was due to the increase of prothrombin in the blood. I am sure the society will be very glad to hear Dr. Garrey's views on the subject.

HEMORRHAGE INTO THE UPPER DIGESTIVE TRACT, WITH ESPECIAL REFERENCE TO ARTERIAL DISEASE AS A CAUSE.*

BY DR. SIDNEY K. SIMON, A. B., M. D.,
Assistant Professor of Clinical Medicine, Tulane University of Louisiana, New Orleans.

Introductory. Within a comparatively short period, I have had occasion to observe the occurrence of massive hemorrhage into the digestive tract in three patients, as a result, apparently in each instance, of a diseased state of the arterial system, with especial localization in the vessels of the stomach and duodenum.

While the presence of arterial disease could not be verified, because of lack of opportunity for direct inspection at the site of the hemorrhage, nevertheless the close association exhibited by the vascular accident in each case, with a manifestly morbid state of the arterial system as a whole, has seemed to me sufficient to warrant the assumption of some definite relationship between the two conditions.

Notwithstanding the fact that rupture of a diseased vessel wall with ensuing massive hemorrhage is an event of common occurrence in other organs, it would seem from a careful survey of the literature, that a similar accident along the gastro-intestinal tract is one rarely if ever, encountered.

That such a possibility does exist, however, and that its occurrence might prove to be the source at times of profuse gastro-intestinal hemorrhage is at least strongly suggested in a critical review of the following three cases:

REPORT OF CASES.

Case No. 1. Rosa N., age 68, mother of nine children, seven living. Had the various infectious diseases of childhood in mild

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form. At the age of 22, a moderately severe attack of typhoid fever. During the yellow fever epidemic in the South in 1867, the patient claims to have had a severe form of the disease. After her 30th year she had several attacks of acute, articular rheumatism, the last of which occurred eight years ago. The menopause took place during her 48th year and was accompanied by many of the usual nervous phenomena. While up to this time there had been no history of dyspeptic trouble, now a tendency to gaseous distention of the bowels was noted, occasioning much distress at intervals, mainly in the form of sticking pains in the left upper abdomen. The bowel evacuations have always remained free and regular.

In 1904, during the patient's 54th year, the first attack of hemorrhage from the gastro-intestinal tract occurred. The day preceding the attack there had been some slight digestive disturbance, for which the attending physician had prescribed a calomel purge. During the early morning hours of the following day, the patient was awakened with a feeling of intense nausea and faintness, and shortly after vomited large quantities of dark, clotted blood. There was extreme languor and other evidences of shock incidental to a large hemorrhage. In the afternoon of the same day a recurrence of the blood vomiting took place, even more copious than before, the evacuation simultaneously of dark red and tarry feces. A tentative diagnosis of latent peptic ulcer was made at the time by the physician in attendance, in explanation of the hemorrhage. A detailed plan of medical treatment for peptic ulcer was followed, covering a period of six weeks, resulting in apparently complete recovery. At this period the patient had been living in a small Alabama city, but in 1908 she moved her residence to New Orleans, when she first came under my observation.

No further evidence of disturbance in the digestive organs had taken place, but for a year previous, she had noticed blood in the urine at intervals, which had given rise to some anxiety. Examinations of the urine made by me in 1908 showed, besides the presence of small quantities of blood, occasional hyaline and granular casts. There was a moderate hypertrophy of the left heart present and the blood vessels were found to be thickened but were not calcareous. The systolic blood pressure at this time was 180.

A mild form of hematuria persisted intermittently from this time without other evidence of genito-urinary disease other than that of a chronic arterio-sclerotic kidney. Cystoscopic examination did not reveal any bleeding surface in the bladder so that in the opinion of Dr. Nelken, who was called into consultation the hemorrhage appeared to be mostly the result of a slow seepage of blood into a sclerosed kidney in the presence of an increased arterial tension.

In January, 1917, without any prodromal symptoms, a second hemorrhage into the digestive tract occurred. According to the patient's statement, the amount of blood vomited on this occasion was not quite as large as in the previous attack. However, from personal observation, the quantity of the vomitus reached fully a pint and a half and the stools remained tarry in color for five days.

Immediately prior to the attack, the blood pressure had been noted at 240 systolic and 115 diastolic. As a result of the copious blood letting, there was a prompt fall in the systolic pressure to 150.

In spite of the profuse nature of the hemorrhage, the patient made comparatively rapid recovery and within six weeks the blood pic- as since remained constantly around the 200 systolic and 110 dias- a tendency to progressive ascendency in the arterial tension which ture returned to the normal. Concurrently, however, there appeared

tolic point. Repeated examinations have subsequently failed to show the presence of an occult blood reaction in the stools.

Status Presens. The patient is of the obese type, with small stature and florid complexion. The surface arteries are hard and moderately nodulated. The pulse is full and bounding and of regular rhythm. The heart is enlarged to the left, past the mammary line. A soft systolic blow can be heard at the apex, transmitted to the left. At the aortic area, the sounds are distinctly roughened, and the aortic closure is loud and sharp.

The abdomen is soft and allows of easy palpation. Neither the liver nor the splenic edges can be felt. No areas of tenderness have been noted at any time.

The blood examinations reveal nothing abnormal. Wasserman reactions are negative. The urine is of a constant low specific gravity and contains occasional casts. Blood cells are frequently present, as described above.

The general health of the patient has remained good in the interim since recovery from the last hemorrhagic outburst.

Epicrisis. In the history and course of this case, the arterial factor would seem to have played a most important role. There is unmistakable evidence of a general arterio-sclerosis present, and the persistent hemorrhage into the genito-urinary tract is in itself apparently of arterial origin. The two attacks of massive gastric hemorrhage, appearing without previous digestive disturbance, are likewise suggestive of a direct arterial origin.

Case No. 2. J. T. N., male, age 42, married, insurance solicitor by occupation. Had the yellow fever at the age of 2 years. In 1898, had one attack of malarial fever of the intermittent type, which he claims lasted three months. Five years ago, he had a severe form of measles. Venereal infection is denied **in toto** and the patient has never been addicted to the use of alcohol or tobacco.

Shortly following the attack of malarial fever, a tendency to repeated and mild gastro-intestinal disturbances developed, which the patient speaks of as "being bilious." These spells have partaken of vomiting, with cramp pains through the abdomen, and a diarrhea lasting two or three days at a time. They followed closely indiscretions in diet, but there have been no recurrences during the past eight years.

Present History. In May, 1916, without previous warning of any kind, a very copius hemorrhage from the digestive tract occurred. A sudden feeling of great weakness was the first evidence of the impending trouble. This was followed within a few hours by the passage of large, tarry evacuations from the bowels, which continued at intervals for four days. There was great pallor and other evidence typical of a severe hemorrhage.

A diagnosis of peptic ulcer, probably located in the duodenum, was made by the attending physician, and the customary bed rest with restricted diet was ordered, extending over a period of six weeks. The patient recovered from this attack without further incident and experienced no further trouble for six months. At the end of this period (October, 1916) there was a repetition of the previous hemorrhagic attack, again evidently from the upper intestine, but in somewhat less volume than before.

The case was again treated as one of simple peptic ulceration and, following his convalescence, another interval of six months intervened before the onset of the third hemorrhage.

This occurred in May, 1917, and proved to be more profuse than the preceding ones. On this occasion, the onset was characterized by the vomiting of a considerable quantity of clotted blood, followed shortly after by the passage of tarry stools.

I had the opportunity of seeing the patient for the first time four days after the onset of this attack, through the courtesy of Dr. Leo Burthe. At that time there was great prostration and a high degree of anemia (hemoglobin 60%; red cell count, 2,095,000, with a few erythro-blasts).

The physical examination showed the patient to be of good physical development, with a tendency to obesity. No edema or jaundice was noted. The heart was found to be enlarged slightly to the left, with a vigorous systolic impulse. No cardiac murmur could be detected. The surface arteries were moderately thickened. The pulse, full and rapid. The systolic pressure measured 170; diastolic 100.

Nothing abnormal was found in the urine. Wassermann reaction was negative.

The abdomen showed normal contour without rigidities or sensitive areas. The liver and spleen could not be palpated.

Once more the patient was kept in bed for six weeks under greatly restricted diet. The occult blood reaction persisted in the stools for fully three weeks. However, there was a gradual return to the normal blood picture and the patient was, in fact, able to return to his business duties within two months. Since this time there has been a mild recurrence of the intestinal hemorrhage on one occasion (October, 1917). This did not necessitate the patient's returning to bed, however, nor did it interfere with his usual daily business routine.

The blood pressure readings in this case, between the intervals of the gastro-intestinal hemorrhages, have been persistently high, in spite of all plans of treatment directed towards its reduction. The highest systolic pressure recorded was 230 in December, 1917, and the minimum 190, in March of this year. He claims, notwithstanding, to feel entirely well, but looks forward with some anxiety to the completion of the next six months' period, when experience has taught him a hemorrhage into his gastro-intestinal tract might be expected.

A careful radiological examination of the digestive tract at this period revealed a small filling defect in the duodenal cap, immediately beyond the pyloric ring. This was visible alike under the fluoroscope and on the plates. It was impossible to determine however whether this defect represented a scar from a healed duodenal ulceration, or was merely the evidence of a tissue break at the site of a previously ruptured duodenal vessel.

Even if we assume a true ulceration as the basis for the repeated hemorrhages in this case, the determining influence of the constantly increased arterial tension, with other evidence of arterial disease, to my mind, can scarcely be denied.

Case No. 3. E. S., male, age 57, occupation, insurance agent.

Since the year 1913, this patient had been under the care of Dr. E. L. King and Dr. C. L. Eshleman of this city, to the latter of whom I am much indebted for the early notes of the case.

Previous Illness.—The patient had always been in good health, with the exception of one attack of continued fever, probably of malarial origin, which occurred during 1900 and lasted three months. In 1909, application for life insurance was refused the patient, on the ground that his urine contained some albumen. He had exhibited no symptoms of kidney disease up to this time, however, and was inclined to pay little attention to this finding. Nevertheless, on the advice of his physician, he had tests of the urine made at subsequent intervals and was informed that albumen was constantly present. For several years back there had been a history of frequent urination at night, but this the patient attributed to the habit he had developed of drinking large quantities of water with his evening meal. The patient had always been a heavy eater and acknowledged using alcohol to some extent. He likewise smoked excessively.

The physical examination, made in 1913 by Dr. Eshleman, showed a well-developed physique with a tendency to corpulency (average weight, 209 lbs.). A few slightly dilated venules on the nose and cheeks were noted. No diseased condition of the eye, nose or throat was found.

The heart was hypertrophied with the point of maximum intensity in the nipple line. The second aortic sound was accentuated, but no murmurs were present. The superficial blood vessels were barely perceptible. Systolic pressure, 175.

The liver, normal in size. Spleen, not palpable. The abdomen showed no evidence of portal stasis and was otherwise negative. Reflexes, normal.

The urine examinations, made at frequent intervals, revealed a constant low specific gravity (1005-1010). The amount of moist albumen varied, but was never high. Occasionally hyaline casts could be demonstrated.

The first evidence of serious mischief in the patient's condition occurred in May, 1915. His health for several months previous had been unusually good, when suddenly he was seized with a fainting spell lasting several hours. Within a few hours, the cause of this was found to come from a large hemorrhage into the upper intestinal tract. The patient was confined to bed for several weeks, under treatment for a supposed peptic ulcer. After convalescence, the diagnosis of peptic ulcer was, in fact, confirmed by a radiologist, in the stage of quiescence or healing.

Following this attack, the health status of the patient remained unusually good for two years. He was able to follow his somewhat arduous work without stint and did not suffer any digestive disturbance.

In the early part of 1917, however, warnings of a failing circulation began to show. He began to note dyspnea, even upon moderate exertion, and had spells of air hunger at night. After eating, he likewise experienced a heavy, full feeling accompanied by eructations.

Shortly after, he took to bed with a so-called attack of acute influenza, which proved to be the precursor of a series of events which eventually terminated in his death, April 2, 1918. I saw him for the first time on March 21, in consultation with Dr. King. The gastro-intestinal symptoms had become especially prominent following the onset of the "grippe". We found him with a dilating heart, considerably cyanosed, and the "cold on the chest" we looked upon as a beginning pulmonary edema. The digestive distress we likewise regarded as secondary to the cardiac decompensation. His blood pressure measured 220 systolic with 105 diastolic. The urine showed a 2% moist albumen and many casts (Sp. Gr., 1025). A

phenolsulphonephthalein test revealed poor kidney functioning (10%-12% respectively).

On March 27 a repetition of the attack of intestinal hemorrhage of three years before developed. This was most profuse in character and seemed to exhaust the patient completely. The arterial tension was markedly lowered at once. From this time to the date of his death, there was noted a gradual failure of the circulation, with rapid, irregular pulse, precordial pains and orthpnea. The stools remained dark red and tarry to the end.

Epicrisis. In reviewing the clinical aspects of this case, it reveals the type commonly grouped as cardio-renal disease. The massive intestinal hemorrhage, however, represents an interesting diversion from the usual clinical picture of this condition. It has seemed to me that these hemorrhages might best be explained by assuming for their basis an advanced arterial degeneration with an accompanying high blood tension.

This becomes all the more convincing when we consider the absence of all typical gastro-intestinal symptoms, which might denote the existence of an organic lesion within the digestive organs themselves.

The Various Etiological Factors Involved in Massive Gastro-Intestinal Hemorrhage.

Even in the earlier medical writings references may be found to the occurrence of large hemorrhages from the upper digestive tract for which no adequate cause could be assigned. The term "gastric diapedesis" was used, in many instances, as a designation for this condition,—a term which merely signifies an oozing of blood from the gastric mucosa, without, however, attempting to explain its cause.

In 1905, Hale White collected, from a group of his cases, several examples of gastric hemorrhage of obscure origin, which he classified as instances of simple "gastrostaxis". This designation again is far too indefinite in character for scientific nomenclature and should never be accepted in explanation of a gastric hemorrhage, no matter how obscure its origin might be.

An attempt should at least be made in each instance to assign some specific pathological grounds for the causation of a massive hemorrhage into the digestive tract. A brief discussion and review of some of the possible factors involved may cidence of visible or gross hemorrhage into the digestive tract, with a discussion of the clinical cases detailed above.

1. *True Peptic Ulcer.* (Cruveilhier ulceration.) The inserve a useful purpose in the present instance in connection

as a result of the common or Cruveilhier type of peptic ulcer, has been estimated variously. Lepert, for example, in his series of cases, found the percentage of visible hemorrhage to be as low as 21%, while Joslyn, on the other hand, in the tabulation of his material, estimates the percentage as high as 81. Stockton's statement that in peptic ulcer macroscopic hemorrhage occurs in approximately one-third of the cases is probably the more nearly correct view. Since further light has been shed upon the more varied etiology of hemorrhage effusions into the gastro-intestinal tract, it would appear that peptic ulcer is not to be considered as frequent a factor as was formerly held. It also should be recognized that after the fourth decade, bleeding from a peptic ulceration is of more profuse character and yields a relatively higher percentage of fatality, because of the greater probability at this period of life of the presence of degenerative processes in the arterial system.

2. *Ulceration Simplex.* (Dieulafoy ulceration.) This condition was first described by Dieulafoy in 1898, and its status as a definite clinical entity has now been fully established by numerous observers. In an article presented in 1918, Moschowitz made a complete review of the entire available literature on the subject, adding four cases from his own experience that had come to operation, in each instance, with a previous diagnosis of true peptic ulcer.

The essential pathology of this type of ulceration partakes of an erosion or superficial necrosis, of the gastric mucosa. The extensive bleeding has been found to occur, however, from the rupture of a small arteriole just beneath the submucosa. A definite etiological basis for the condition has, as yet, not been determined. The clinical course is marked by a sudden vomiting of blood, usually in large volume, with the attending phenomena of pallor and shock. Only rarely do premonitory digestive symptoms occur. The prognosis is not unfavorable.

Malignant Growths. Malignant growths invading the lumen of the digestive tract rarely become the source of massive hemorrhages. Instead, there is to be expected rather a slow seepage of blood derived from capillary oozing. Nevertheless it should be remembered that the erosion of a large vessel might occur in neoplastic tissue, especially when extensive sloughing takes place.

Hepatic Cirrhosis. This is generally recognized as perhaps the most frequent cause of massive hemorrhage from the digestive tract.

According to the statistics collected by Preble in 1900, among 60 cases of fatal gastro-intestinal hemorrhage in cirrhosis of the liver, in fully 85% the location of the ruptured varix was found in the lower third of the esophagus or in the stomach. In the other 15%, the bleeding had its origin in the simultaneous rupture of numerous venous capillaries situated in the mucosa, of the stomach or upper intestine.

Probably the most important feature of Preble's studies is embodied in his statement, that "in two-thirds of the cases the diagnosis of hepatic cirrhosis either was not made at all, or only after months or years, during which time other symptoms of cirrhosis developed." This will serve to explain the occurrence of profuse hematemesis in certain cases for which no cause is immediately ascertainable.

In addition to the usual Laennec type of cirrhosis Hamburger has also reported an interesting case of profuse recurring hematemesis with fatal outcome, which autopsy demonstrated had been caused by an extensive syphilitic cirrhosis of the liver.

Splenic Anemia and Other Forms of Splenomegaly: The advent of hemorrhage into the stomach and intestinal tract in splenomegalies of whatever origin is by no means an uncommon clinical event. The most notable example of this is found in splenic anemia, or the so-called "Banti's Disease." Whether Banti's Disease, as such, should be considered a distinct clinical entity, still remains a matter of controversy. Norris, Symmers and Shapiro have insisted upon an entire elimination of the term from splenic pathology, claiming that the condition is merely a manifestation of a syphilitic involvement of the spleen and liver.

However, apart from the standpoint of etiology, the syndrome commonly known as Banti's Disease is, undoubtedly, a not infrequent cause of severe attacks of gastro-intestinal hemorrhage.

The fundamental cause of the hemorrhage cannot be definitely established in all of the cases, but it is not believed to be entirely dependent upon a concurrent hepatic cirrhosis, as some have claimed.

In an interesting case, reported by Donald C. Balfour a few years ago, recurring gastro-intestinal hemorrhages were present for which no explanation could be found even after several exploratory laparotomies had been undertaken for the purpose. In the final effort to find some method of checking the persistent hemorrhages, Balfour decided upon a removal of the spleen, which indeed brought about prompt and complete recovery in the case. The spleen, after removal, was found to be twice its normal size, and the liver, according to the records, showed "apparently moderate cirrhosis."

Toxic Hemorrhagic Gastritis: This represents a pronounced grade of inflammation involving the gastric mucosa, as a result of a direct invasion of infectious organisms of various kinds, principally the streptococcus and the pneumococcus.

The source of such infection is usually found in one of the abdominal organs, though more remote antrums of infection, such as the tonsils, the gums and the root canals of the teeth, must not be overlooked.

According to Deaver, "a knowledge of the hemorrhagic possibilities of active congestion of the gastric mucosa cannot be learned at the mortuary slab, but only by witnessing its bleeding surface on the operating table in the living."

The recognition of this condition as one of the possible causes of sudden and massive hemorrhage from the stomach is of comparatively recent date. However, its status has now been fully established and in searching for the origin of an otherwise obscure gastrorrhagia the possibility of a inflammatory, bleeding gastric mucosa should be kept in mind.

An instructive case in point has been reported by Outland and Clendening. The patient had suffered several attacks of severe gastric hemorrhage. Upon operation, the appendix was found buried in a dense mass of adhesions to which the omentum had become attached. The authors believe that the hemorrhage from the stomach, in this case, represented a seepage of blood from an infected gastric mucosa and that the infection itself had been conveyed directly from the appendix to the stomach by means of an adherent omentum.

The Blood Dyscrasias. Profuse hemorrhage might occur in the course of any severe type of anemia, as the result of the sudden rupture of a vessel wall which has been weakened by

fatty degenerative changes. The gastro-intestinal tract may thus become at times the scene of more or less copious hemorrhage as a sequel to such conditions as pernicious anemia, leukemia, Addison's Disease, chronic malaria, etc. Likewise, in hemophilia and in the several forms of purpura, vascular accidents of a similar nature have been reported as occurring along the alimentary tract.

Aortic Aneurysms, with Rupture into the Digestive Tract. This is obviously among the less frequent causes of hemorrhage into the digestive tract. Among the 149 instances of ruptured visceral aneurysms, tabulated by Nixon in 1911, in only three did rupture occur directly into the gastro-intestinal tract. Since that time, four additional cases have been recorded in the literature, two of which, recently reported by Morlow, were found to have taken place directly into the duodenum.

Vicarious Menstruation. The question still remains *sub-judice* as to whether a sudden and profuse hematemesis can at any time be explained solely upon the basis of a vicarious menstruation into the free lumen of the stomach.

In conjunction with many other careful observers, Stockton takes his stand as a firm believer in the possibility of such an event. This author, in summarizing his views on the subject, clearly states his conviction that "the vomiting of blood in lieu of the catamenial discharge, is a reality."

On the other hand, Deaver holds a decidedly contrary opinion, expressing himself emphatically in these terms: "Vicarious menstruation, as a cause of hematemesis, is an absurdity of the medical imagination more fertile in hypothesis than in knowledge of living pathology."

None the less, it would seem that the undoubted occurrence of vicarious menstruation in other organs would lend weight to the view that a similar event might take place, even though rarely, into the digestive tract.

The Role of the Arterial Factor in the Etiology of Massive Gastro-Intestinal Hemorrhage. The assumption that localized disease of the gastric vessels themselves might take part in the pathogenesis of peptic ulcer was entertained by Virchow, as far back as 1853. Even prior to that time, Cruveilhier, in his earlier descriptions of the peptic ulcer lesion, had called attention to the sharply defined discrete character of the lesion

which he was inclined to explain upon the basis of some interferences with the vascular supply to the diseased area. In the more recent literature, scattered references may be found pointing to the influence of localized arterial disease as one of the predisposing factors in the etiology of peptic ulcer.

In 1913, this aspect of the subject received an exhaustive and critical analysis at the hands of Orphuls, in an article entitled "The Relation of Gastric and Duodenal Ulcer to Vascular Lesions." As a result of his study, this author expressed the view that gastric and duodenal ulcers arise uniformly from interference with the vascular supply to definitely limited areas of the gastric and duodenal mucosa. Numerous instances are cited by him, largely based upon material obtained by necropsy, to prove that arterio-sclerotic processes in particular with ensuing obliteration of the gastric and duodenal vessels become the determining factors in the etiology of peptic ulcer, especially in individuals past the age of thirty. While this extreme viewpoint has not met with general acceptance, sufficient evidence is at least available to indicate that in the pathogenesis of peptic ulcer the arterio-sclerotic factor can no longer be considered a negligible one.

Stockton, for example, in reviewing the record of a case of extensive gastric ulceration, seen by him, which was found at autopsy to have been caused by an obliterating arteritis of several of the gastric vessels, frankly acknowledges the possibility that, "the very large ulcers of the stomach occasionally observed past middle life, result from the condition of arterial disease more often than is generally supposed."

In two of the cases reported above, it will be recalled that radiological examination indicated the presence of previous ulceration in the duodenum. Since both individuals likewise exhibited unmistakable evidence of arterial disease, it might be assumed that the profuse and recurring hemorrhages into the intestines, in each instance, had their source in an ulceration of arterio-sclerotic origin.

Unfortunately this could not be definitely established, in view of the lack of opportunity for direct inspection of the lesions themselves.

Apart from this assumption it is not to be denied that the associated hypertension of the arterial system in each of the

three cases played a most important role in determining the occurrence of the hemorrhagic attacks. With each recurring attack, a prompt lowering of the vascular tension was noted, as was to be expected, but, within a brief period the pressure readings showed a uniformly rapid return to the heights previously attained.

Under the circumstances, it has appeared to me as if the copious effusion of blood, in those cases, served in a measure as a safety valve in blood-letting, relieving, in this manner, excessively high tension from the entire arterial system. We might even consider an apoplexy of this type within the free lumen of the digestive tract, as a life saving effort, sparing the more serious consequences which would await a vascular accident of similar nature in more vital organs.

Finally, it should not be overlooked that simple arterial rupture is possible along the gastro-intestinal tract, without previous ulceration, simulating a pathological picture not infrequently presented in other organs; notably, in the brain. Under the strain of an increased vascular tension, a vessel wall, previously weakened by degenerative changes, might rupture outright with an outpouring of blood, into the digestive tract.

DISCUSSION.

Dr. E. L. King: Dr. Simon's third case interested me exceedingly, as I treated this gentleman in his first attack. At this time the bleeding was entirely intestinal. This fact together with a history of "indigestion" and hearty eating as well as the X-ray findings of a filling defect in the duodenal cap pointed to the diagnosis of duodenal ulcer. This was also the diagnosis of one of our leading internists, a professor in the department of medicine of Tulane, who saw him in consultation. The subsequent course proved it to be without doubt a case of intestinal hemorrhage due to arterial disease.

Some years since Dr. Miller removed the uterus from a colored woman at the Charity Hospital, her complaint being hematemesis. She had been vomiting blood at times for years. A gastro-enterostomy had been done, under the diagnosis of gastric ulcer, without relief. She has been under our observation ever since the hysterectomy, and has had no further trouble. I believe this was a case of vicarious menstruation, as mentiond by Dr. Simon. I would be glad to show him the patient some day.

Dr. D. N. Silverman: It is well to call attention to the fact that the many complications of arterial disease, including hemorrhage into the upper digestive tract, should be thought of in young adults below the age of thirty years, as well as in those of middle and later life. This statement results from personal experience in autopsy work upon young soldiers between the ages of 25 and 30 years. Many of these men dying of acute infectious diseases such as influenza, meningitis, typhoid and paratyphoid fever, manifested moderate and severe grades of aortitis which went unrecognized

clinically. In a few cases with gastric ulcer, the same vascular pictures with advanced arteritis were demonstrated. These observations in 1918 and 1919 are well substantiated in the recent work of Warthin. This author, in a histopathological study of seven-hundred (700) cases, concluded that 40% of the latter showed some syphilic infiltration.

Dr. J. A. Storck. Some years ago during my connection with the Eye, Ear, Nose and Throat Hospital, I recall a case with varices of the lingual body in which a copious hemorrhage occurred. Another case of more recent date came under my observation. A farmer, aged 56, who had frequently complained of gastric distress had a copious hemorrhage. A diagnosis of gastric ulcer was made by his attending physician. I was called to see the patient, who presented well-marked evidence of arterio-sclerosis. A surgeon consulted, advised operation. I stated my objections to any surgery, but the patient was operated, and a short time afterwards he succumbed.

I think Dr. Simon is justifiable in assuming that arterio-sclerosis was the cause of the hemorrhages occurring in his cases.

PRELIMINARY REPORT ON TREATMENT OF GRANULOMA INGUINALE WITH EXHIBIT OF CASES.*

By W. A. REED, M. D., and MONROE WOLF, M. D., NEW ORLEANS.

Before going into the case histories of the patients whom we are exhibiting tonight, it is only proper that a few words be said regarding the history, etiology, clinical characteristics and results of the previous forms of treatment in granuloma inguinale.

Macleod[1] in India in 1882 was the first to note and describe the disease, and at the time called it "serpiginous ulceration of the genitals." The next publication appeared in 1896 by Conyers and Daniels[2] who classified it as a form of lupus. The following year (1897) a very complete article was written by Galloway[3] describing the first recognized case occurring in England, in which he gave an accurate description of the symptoms as well as the treatment of the case, and which he classified as a form of "yaws" because of the histological similarity of the lesions in both diseases. LeDantic[4] in 1900, and Jeanselme[5] in 1904 considered it tubercular in nature. In 1905 Donovan[6] discovered the bodies that have since been almost constantly found in the lesions of granuloma inguinale, and classified it as belonging to the protozoan group of diseases. Wise[7], Maitland[8], Bosanquet[9] and MacLennon[10] in 1906 found spirilla in the lesions which they, with the exception of

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Bosanquet, thought were the spirocheta pallida, and accordingly decided that granuloma inguinale was syphilitic in nature. Bosanquet, however, considered the newly found organism to be the spirocheta refringens. In 1906 Poch[11] described the first recognized case occurring in the United States. In 1909 Cleland[12] also reported finding a spirillum in the lesions of two cases and gave it the name of "spirocheta aboriginalis" because of the occurrence of the disease among the aborigines of West Australia. In 1907 Sibert[13] found an incapsulated diplococcus in lesions of granuloma inguinale similar to the bodies described by Donovan. In 1911 Flu[14] ascribed the disease to a form of chlamydozoa. In 1913 Martin[15] found an incapsulated diplococcus not unlike the Donovan bodies which he was able to grow in culture. During the same year Araogoa and Vianna[16] discovered that tartar emetic which had given such wonderful results in the treatment of trypanosomiasis was equally efficient in the treatment of granuloma inguinale, and obtained complete cures in a number of cases. However, they considered the causal agent to be a new genus of schizomycete to which they gave the name "kalymmato bacterium granulomatis." Later on (1917) Araogoa[17] recovered from the lesions a capsule bearing bacterium not unlike the bacillus mucosus capsulatus of Friedlander of which he was able to grow cultures. Animals innoculated with an emulsion of these organisms died from a severe septicemia within twenty-four hours. In 1918 Walker[18] grew cultures of these same incapsulated bacilli, which he classified as belonging to the Friedlander group. There have been a great number of articles written on granuloma inguinale in recent years and while the majority of the authors have been able to demonstrate in the lesions the bodies described by Donovan, yet they are not in accord as to whether the apparently causal organism belongs to the protozoan or bacterium group.

The geographical distribution of granuloma inguinale was always considered to be tropical or semitropical until 1906 when Poch reported the first recognized case occurring in the United States. There is no doubt in our minds that this disease has been endemic in the United States and especially in the Southern States, for a great number of years without recognition upon the part of the medical profession, being diagnosed as serpiginous chancroids in practically every instance. In fact in our

own clinical experiences at Touro Infirmary and Charity Hospital we have made such diagnosis in cases that we now realize were typical cases of granuloma inguinale.

Until the appearance of the work of Araogoa and Vianna in 1913, the only known treatment for granuloma inguinale was curettage, cauterization, the X-ray, local antiseptic applications and antiluetic treatment. With a few exceptions literature as well as our own experience has shown that cures from such treatment have been practically nil. In spite of the wonderful results obtained by Araogoa and Vianna as long ago as 1913 the old form of treatment has continued to be the one in vogue here in the United States until almost the present time.

The clinical characteristics of granuloma inguinale are nearly always the same. The disease occurs practically only in the colored race. There are only a few cases reported in the literature where it has occurred among the whites. Both males and females are subject to it, with perhaps a slight preponderance of females. It begins with one or more small very slightly indurated papules which soon break down leaving a red granulated area with a slightly elevated surface and edges and very little induration. The surface exudes a glairy bloody fluid and here and there may develop crusts. The lesions are not painful except on pressure but bleed very easily. Spreading occurs along the margins and on opposing surfaces. Involvement of the glands practically never occurs, altho some cases may show pseudo-elephantoid involvement of the scrotum or labia due to obstruction of the lymphatics from fibrous tissue deposit. The usual location of the lesions are on the genitalia, thighs, perineal, perianal and inguinal regions, altho it may manifest itself on the face, neck and even within the mouth as demonstrated in one of the cases shown tonight. The disease is always of a chronic nature, its duration ranging from one and a half to fifteen years in our cases.

All of the cases shown have had the old classical form of treatment with no benefit whatever. Repeated blood Wassermann examinations have been negative and on some of them scrapings for the spirocheta pallida have been done with negative results. It was only on instituting the tartar emetic treatment that we began seeing results in our cases. Altho tartar emetic may be and has been given by mouth as well as by in-

unction and intramuscular injection (Castellani[19]) we have chosen the intravenous route as being the simplest. Solutions of antimony and potassium tartrate are prepared with freshly distilled sterile water in one per cent strengths and intravenous injections are given at intervals of three to seven days, starting with an initial dose of two centimeters (cubic) and increasing the amount 2 c. c. each time until therapeutic results are obtained. At the present time some of these cases are receiving as much as 14 c. c. at an injection. A few slight and transient reactions have been observed. A sudden paroxysm of coughing occurred in one case immediately after having received the injection and in another we observed diarrhea and vomiting. These two reactions occurred on arriving at a dose of 8 and 10 c. c. respectively.

We have been able to demonstrate the Donovan bodies in three of these cases and at the present time are endeavoring to grow cultures of the organism with a view of innoculating experimental animals if possible.

In concluding this preliminary report we wish to express our thanks to Dr. A. Nelken in whose service at Touro Infirmary the majority of the cases have been studied and treated. We also wish to express our appreciation for the interest and assistance of Dr. I. M. Gage who found the Donovan bodies in one of our first cases, as well as to Drs. Lanford, Johns, D'Aunoy, Davidson, Carter and P. Gelpi, to the latter of whom we are indebted for the privilege of showing tonight a case from his service at Charity Hospital.

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*NOTE—References indicated by a star are taken from an article by Dr. E. L. Walker, Journal of Medical Research, Vol. 37, Sept., 1917, to Jan., 1918.

Case No. 1. Mrs. J. T., born and raised in Louisiana, aged 27 years. No children. Colored. Lesions appeared in March, 1919. three months following a laparotomy. No exposure for 4 months previously. Lesion started as a small "pimple, which contained water" in one labium of the vagina, which ruptured after three or four days leaving an ulcerated area which spread rapidly. After four months she consulted a physician. At this time the lesion involved both vaginal walls and the thighs, and there was great suffering from wine coming in contact with open lesions. Considerable odor and discharge was present also. She was treated with local applications until she appeared at Touro Infirmary, November 5th, 1920. At this time, the lesion appeared as shown in the photograph. Blood Wassermann was negative. Smears examined for Donovan bodies by Doctor Lanford were reported as negative. Treatment with X-ray, bichlorid of mercury packs and douches, dichloramine T, silver nitrate applications and mixed treatment were tried until March, 1921, with no benefit whatever. Then tartar emetic injections were begun and continued as follows, complete cure being attained:

April 2/21, Tartar Emetic, 3 c. c.—Improvement in burning, discharge and spreading checked.

April 6/21, Tartar Emetic, 5 c. c.

April 9/21, Tartar Emetic, 6 c. c.—Slight dizziness.

April 12/21, Tartar Emetic, 8 c. c.—Marked improvement, slight nausea, no vomiting.

April 16/21, Tartar Emetic, 8 c.c.—Hacking cough lasting for 5 minutes, dizziness.

April 19/21, Tartar Emetic, 9 c. c.—Lesions completely healed, coughing occurred after injection.

April 23/21, Tartar Emetic, 9 c. c.—Slight reaction coughing, lesions still appear completely healed.

Case No. 2. Mrs. H. F., born in Louisiana, aged 26 years, 1 child, Colored. Referred from gynecological clinic on June 28, 1920, for sore on Vulva and in left inguinal region of 1 year and 5 months duration. Wassermann—strongly positive. Three injections of salvarsan were given: on July 6, 1920, July 20, 1920, Sept. 14, 1920, with mixed treatment between injections. Numerous applications of X-ray were given in the meantime. On October 22 and October 29 two more injections of salvarsan were given. At this time the general condition had improved but no change had occurred in the lesions. December 16, 1920, Wassermann, negative. In January, 1921, three more injections of salvarsan were given. On March 7, 1920, the lesions were unchanged. Tartar emetic was then begun:

Donovan bodies looked for and none found in slides stained by Gram method; later found them when stained with Wright's stain:

March 9/21, Tartar Emetic, 2 c. c.—No reaction.

March 14/21, Tartar Emetic, 4 c. c.—Lesions look dryer.

March 21/21, Tartar Emetic, 6 c. c.—Lesions look dryer and healing; feels better, slightly dizzy and nauseated.

March 28/21, Tartar Emetic, 6 c. c.—Lesions still healing, no reaction.

April 4/21, Tartar Emetic, 8 c. c.—Feels very good, lesions still improving.

April 18/21, Tartar Emetic, 10 c. c.—Lesions healing beautifully, in fact practically entirely healed.

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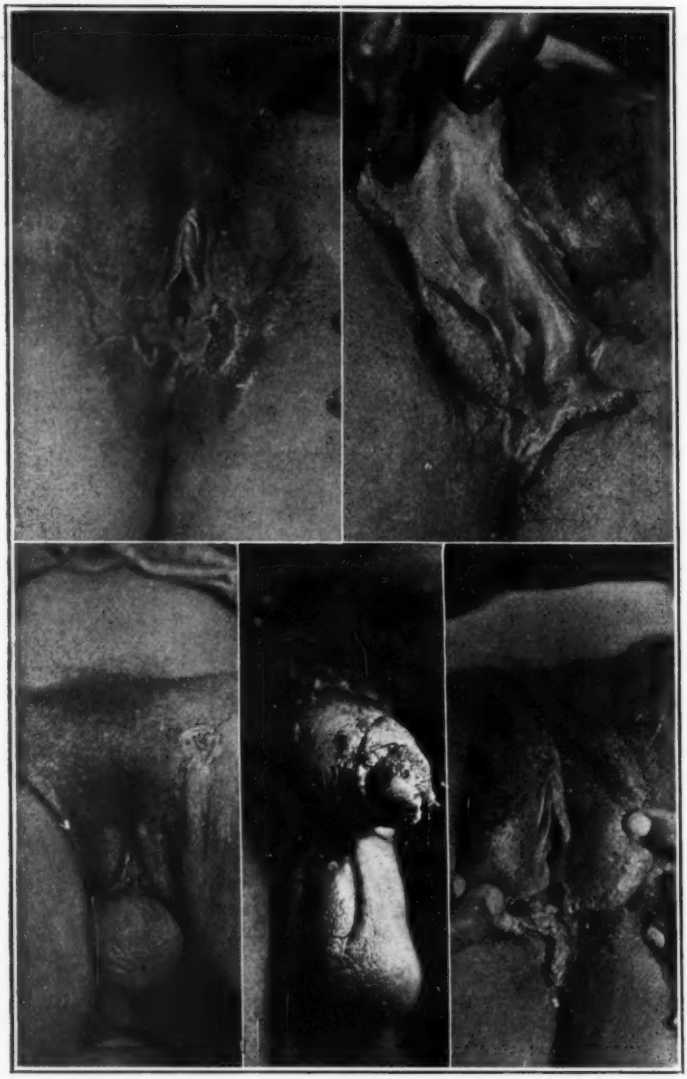


UPPER LEFT—Case 1, before treatment with tartar emetic; complete cure resulted. UPPER RIGHT—Case 3, showing lesions on labia extending into perresulted. UPPER RIGHT—Case 2, showing lesions on labia extending into perineum. Mass on right labium is a fibroma; lesions now practically healed. LOWER LEFT—Case 3, showing lesions in left inguinal region; completely cured. LOWER CENTER—Case 4, lesions on glans penis, shaft and scrotum; almost well at present. LOWER RIGHT—Case 5, lesions on floor of vagina and labia; treatment recently started.

Case 3. Mrs. S. K., born in Louisiana, aged 25, no children, colored. Referred from Gynecological Clinic February 24, 1921, with a diagnosis of possible lues. At this time she complained of sores in the privates which had been present for 10 months. Examination showed an elevated granular ulceration involving both labia minora, lateral walls of the vaginal orifice and extending down onto the skin of the perineum. There was also a similar lesion in the left inguinal region which she said had been present for almost 3 years, and which started as a "kernal" which she painted with iodine. It very soon broke down with considerable bleeding leaving an ulceration which has failed to heal up to the present time. According to the patient the lesion in the vagina began as a "bump" on the vaginal floor which she scratched because of the associated itching, producing an ulceration which at the end of the month had reached the size of a quarter. She then consulted a physician who prescribed local treatment and mercury rubs with no improvement in the lesions whatever, the lesions continuing to spread.

While at the Isolation Hospital in 1919, she was given three "shots" in the arm. On admission to the Clinic (February 24, 1921) the Wassermann reaction was negative. Dichloramine T was first used without results. Then Tartar Emetic was begun, the following injections having been given:

March 15/21, Tartar Emetic, 3 c. c.—Dizziness.

March 19/21, Tartar Emetic, 3 c. c.—Dizziness, vomiting and loose bowels, lesions better, no reaction.

March 24/21, Tartar Emetic, 3 c. c.—Donovan bodies looked for but none found.

March 28/21, Tartar Emetic, 6 c. c.—No reaction, groin lesion healing.

March 31/21, Tartar Emetic, 7 c. c.—Improving, no reaction.

April 2/21, Tartar Emetic, 8 c. c.—Improving, no reaction.

April 5/21, Tartar Emetic, 10 c. c.—Vomiting, headaches, no diarrhea.

April 7/21, Tartar Emetic, 10 c. c.—Groin lesion healed, habitual epistaxis with which she had been suffering has stopped.

April 9/21, Tartar Emetic, 10 c. c.—Vomiting and diarrhea.

Report from E. N. & T. department at this time:—small ulcerated area on right side of naval septum. Smaller but similar lesion on left side probably not Luetic.

April 12/21, Tartar Emetic, 10 c. c.—Vomiting and diarrhea, pains in shoulder.

April 16/21, Tartar Emetic, 8 c. c.—Vomited, loose bowels.

April 19/21, Tartar Emetic, 10 c. c.—Vomited and diarrhea, slight cough, general pains, lesions in vagina practically healed.

April 23/21, Tartar Emetic, 6 c. c.

NOTE—Smears and scrapings were examined by Dr. Lanford for the spirocheta pallida and Donovan bodies with negative results.

Case 4. W. M., born in Mississippi, aged 29, colored. Sore appeared on glans penis in October, 1916, while working as Pullman porter in Mexico. Exposed 1 week previously. About 7 days after sore started, began having fever, (no chills), which lasted 3 weeks. Bubo developed about 8 days after appearance of sore which was opened and great deal pus liberated, healing in about 1 month. By this time sore had involved whole of glans penis. Then circumsized at Charity Hospital. Almost healed after this, but 2 weeks later started with little "pimple" and whole thing broke down again. Used all sorts of treatment, including one

dose salvarsan while in Camp Beauregard in August, 1918, with no benefit. First appeared at Touro in January, 1919. Left and went to Charity Hopital. Given medicine by mouth and various salves. Reappeared at Touro on March 16, 1920. X-ray was applied many times. Then cauterized with actual cautery at Charity Hospital in April 13, 1920. Two Wassermann, both negative, Two doses salvarsan, each 0.5 given in July, 1920, with no improvement. Mixed treatment and local applications as well as large doses of iodides were then used.

On December, 1920, Dr. I. M. Gage removed whole of involved area and skin grafting was done. This caused no improvement whatever. Donovan bodies were found by Dr. Gage at this time. Tartar Emetic was started on March 16, 1921.

March 16/21, Tartar Emetic, 3 c. c.—No reaction.

March 19/21, Tartar Emetic, 4 c. c.—No reaction.

March 25/21, Tartar Emetic, 6 c. c.—No reaction.

March 30/21, Tartar Emetic, 8 c. c.—No reaction.

April 4/21, Tartar Emetic, 10 c. c.—No reaction.

April 11/21, Tartar Emetic, 12 c. c.—No reaction.

April 18/21, Tartar Emetic, 15 c. c.—Dizziness, vomiting and diarrhea followed.

April 25/21, Tartar Emetic, 10 c. c.—No reaction.

Lesions healing nicely, in fact all healed except two small areas near the meatus of the urethra.

Case 5. Mrs. J. H., born in Louisiana, never out of U. S. A., 21 years old, no children, colored. Sore developed over 1 year ago. Has been treated by three doctors before coming to Touro Clinic. Sore gradually increased in size until present time. Wassermann, September 25/20, negative. Silver nitrate used. Also douches of bichloride. Took 2 "shots" salvarsan in Texas 9 months ago. No benefit whatever. At present time sore involving floor of vaginal orifice; both labia show some hypertrophy and covered with elevated papules and a few small ulcerations. Right inguinal gland operated when a child; indurated scar remains. Left inguinal gland normal, until 2 weeks ago; now swollen; probably secondary infection. Scraped April 20/21, Donovan bodies found. Sections (Dr. Lanford): Infectious granuloma, acute and chronic inflammatory reaction.

April 22/21, Tartar Emetic, 3 c. c.—No reaction.

April 25/21, Tartar Emetic, 6 c. c.—No reaction.

Not under treatment long enough to see clinical change in the lesions, but patient says she feels much better.

DISCUSSION.

Dr. I. M. Gage: I have been very much interested in Granuloma Inguinale for some time, and had the pleasure of studying one of the cases presented by Drs. Reed and Wolf here tonight. This patient was referred to the surgical clinic from the G. U. Clinic of Touro Infirmary on August 24th, 1920. I made a clinical diagnosis of Granuloma Inguinale and was able to verify my diagnosis the next day, by finding the typical Donovan bodies in the large endothelial leucocytes. The smears were taken from the most active part of the ulcer.

The patient had a typical ulceration, annular in type, surrounding the penis just behind the corona, and extending on to the glans penis. The patient developed a sore one month after coitus, which gradually encircled penis as above indicated, and remained localized on the penis. He was treated for five years, by the following procedures: circumcision, cauterization, salves, antisyphilitic

treatment, and finally was given nine X-ray exposures without any relief or diminution in size of the ulceration.

I tried in August to obtain some tartar emetic, but was unable to procure any at that time after several attempts. The patient was very anxious to have something done for him, and about this time I came across an article by an English surgeon in India recommending surgical removal. I tried it on this patient in October, 1920, and he remained free from the disease for a month after which time he had a recurrence, whch rapidly assumed the former proportions. I did not skin graft this patient as stated by Dr. Wolf, as it would be an unsound surgical procedure to skin graft an ulcerated area of the Granuloma Inguinale type.

Dr. Reed succeeded in obtaining some tartar emetic and the patient was referred back to him for treatment, and I am gratified by the results obtained by him in relieving (practically curing) this unfortunate who had suffered for almost five years.

The organisms causing the disease are found in the most active part of the lesion, namely, at the advancing edge situated deeply in the tissue, and are best obtained by taking out a section under local anesthesia, trimming all the granulations away and squeezing the piece of tissue. In this way, you get almost a pure slide of Donovan bodies, the same procedure should be carried out in obtaining material for cultures, except the tissue should be washed in saline.

I have identified within the endothelial leucocyte the following types of organism. (1) Zooglear masses, (2) dumb-bell shaped encapsulated bacilli, (3) encapsulated bacilli, (4) encapsulated bipolar or diplo-bacilli bodies, (5) non-encapsulated bacilli or only showing the capsule very faintly, in vacuole spaces in the cytoplasm of the endothelial leucocyte.

I have found large masses of coccoid like bodies staining red in the endothelial leucocyte, which gave me trouble at first, but finally I was able to identify them as the granules of eosinophiles. I have found the endothelial leucocytes engorged with neutrophiles, red blood cells, small mononuclears, basophiles, and eosinophiles, also other types of bacteria in various stages of digestion. The cytolytic granules are the last part of the cells to be digested, and the nucleus of the small mononuclear seems to be the last part of the cell of that series to be phagocytised; all of the above are very confusing and should be studied thoroughly, before drawing any conclusions.

The Donovan bodies take a beautiful stain with Wright's. The organism takes a dark blue stain, while the capsule takes a light blue stain, and cannot be confused with the other types of bacteria encountered in the smears. You find anywhere from four to five organisms up to 25-30, and in some instances the endothelial cells are engorged to bursting capacity with them. The organisms are also found extra cellular, scattered throughout the smear, but I have been unable to find them in the neutrophiles of the phagocytic series. I do not think a definite diagnosis of Granuloma Inguinale should be made without finding the encapsulated organisms within the endothelial leucocyte in smears taken from the lesion.

The disease is a definite clinical entity, transmitted by sexual intercourse, incubation period not definitely known, producing a chronic sclerosing ulceration of serpiginous type, occurring on the penis, vagina and the groins. There may be auto-innoculation in various parts of the body.

The etiology is the bodies described by Donovan, and conforming morphologically and culturally with the group of encapsulated bacilli.

Dr. A. Mattes: We are here dealing with an infection, supposedly due to a coceus or a bacillus. The fact that a member of the bacterial group is named as the causative agent in granuloma inguinale in spite of the effect of the administration of tartar emetic is quite surprisng.

We know that tartar emetic has been of value in certain diseases of protozoal origin, i. e., trypanosomiasis as well as certain tropical lesions due to members of the group of spirochetoridea. I cannot conceive of the same agent being specific for a coccus or a bacillus, no matter of what nature. To my mind, Granuloma Inguinale is not a bacterial disease, but is due primarily to a protozoon or a member of the group of spirochetoidea.

It is safe to assume this in spite of the evidence submitted. Were antimony of value as a bactericide, its value would have been recognized years ago and its use as such well established. Here for the first time in the history of medicine, we have a salt advanced as the curative agent in a disease of supposedly bacterial origin. Experiments date back to the ages in the use of salts or combinations for the treatment and prevention of disease due to pyogenic and pathogenic organisms.

No salt has ever been of great value in the treatment of any disease due to a bacillus or a coccus. All salts or combinations of such that have been of any value have been so only in protozoal diseases and diseases due to members of the spirochetoidea group. Inasmuch as antimony is of value in the treatment of the disease caused by members of this group, time will prove that its value in granuloma inguinale depends on its effect on a member of this group and not a coccus or a bacillis found in a fair percentage of such cases.

Were this otherwise, the literature would by now be full of praises of drugs in the treatment of infections. Cocci and bacilli have never been successfully attacked by the administration of drugs. Were it so in this case, the time would now be at hand for the complete revolutionizing of the practice of medicine, for bacterial diseases would be conquered by the direct administration of salts.

As to tartar emetic, I would caution the profession as to its intravenous use. While such medication is of value, of great value, the danger of administering a direct toxic agent and the fact that it has a cumulative action should be borne in mind.

Granuloma Inguinale is a local disease not a constitutional one. Therefore, local treatment of an agent that can be and is absorbed by the area involved while not so rapid in its effect as intravenous medication, is safer, sounder and more nearly approaches the ideal. It may take a little longer, but there is no attached danger, no organ is damaged and no patient is even temporarily disabled. It should be used in all cases, reserving intravenous medication for obstinate cases or where rapid results are essential.

Other factors should be borne in mind in the treatment of granuloma inguinale. Granuloma Inguinale is usually, if not always, secondary to an initial syphilitic, chancroidal, or other ulceration. Therefore, antisyphilitic treatment should be stressed as of equal importance in the treatment of a fair percentage of these cases. Where chancroidal or otherwise, appropriate local measures should be instituted as curretage, cauterization and at times plastic procedures.

A case I have in mind involved the shaft of the penis, circumscribed the base of the penis, involved the scrotum, right inguinal region, right groin and as far back as the tuberosity of the ischium. The duration was eight years; repeated cauterization and some

anti-syphilitic treatment were of no avail. X-ray exposures had no effect. This case ran the gamut of eight physicians, was given up as hopeless and told by one that suicide should be welcomed. He could not sit down, walked with great effort and with a stoop. Vigorous antisyphilitic treatment coupled with one per cent tartar emetic in normal saline as compresses to the region involved brought about the desired result. After three weeks treatment, the lesions practically disappeared. For its persistence in a small area in the inguinal region two doses of the solution were given intravenously, five and seven cubic centimeters seventy-two hours apart.

The patient at this writing is hale and hearty, has no discomfort and is apparently normal.

Dr. F. M. Johns: I have had the pleasure of studying most of the material from Drs. Reed and Wolf's series of cases, and while the evidence is not conclusive that this bacterium is the etiologic factor involved in the production of Granuloma Inguinale the uniform occurrence of these bacteria like bodies deep down in the involved tissue seems to be more than an accidental occurrence.

The important bearing of this work as a whole would strike me in the apparent cure of a bacterial disease by a synthetic drug administered intravenously. This has no parallel in medical therapy to my knowledge, and if borne out by subsequent study will open a vast field to possible results from direct "bacterial" chemotherapy.

ABSTRACT OF ADDRESS ON THE MORTALITY FROM CANCER IN THE SOUTH.*

BY FREDERICK L. HOFFMAN, LL. D.,

Third Vice President and Statistician, the Prudential Insurance Company of America, Newark, N. J.

Following a brief outline of a statement regarding the plans and purposes of the American Society for the Control of Cancer and the recent changes in the cancer death rate of the Registration Area, indicating an arrest of the progressive increase in the disease observed up to 1917 or 1918, when the educational work of the Society became effective, Dr. Hoffman said, in part:

"The present discussion covers a wide range of cancer questions hardly susceptible of being reduced to precise conclusions. The discussion is intended to stimulate further consideration of phases of the Cancer problem which seem at the present time to receive inadequate attention. The literature of cancer is so vast, even during the course of a single year, that no one could hope to do justice to the numerous new contributions made to cancer knowledge, often involving many years of pains taking research. The practical cessation of international scientific intercourse during the war has also made it difficult to keep in touch with what has been done in foreign countries,

*Read before the Orleans Parish Medical Society, May 9th, 1921.

particularly the late German Empire, since 1914. As an illustration of the value of investigations hardly known in this country, mention may be made of the epidemiological cancer research by Dr. Hillenberg, of Zeitz, published in 1916 by the Medical Section of the German Ministry of the Interior. The great work by Wolfe in three volumes, of which the last was issued in 1914, also has hardly become known in America. The same conclusion applies to a small but important treatise on "The Exact Diagnosis of Latent Cancer", by Dr. O. C. Gruner, of Leeds, England, published by H. K. Lewis & Co., Ltd., London, and P. Blakiston's Son & Co., Philadelphia, 1919. This work, which is an inquiry into the true significance of the morphological changes in the blood, bears a close relation to the, as yet, unpublished work of Dr. Georgine Luden, of the Mayo Clinic, submitted as a thesis for the degree of Doctor of Medicine to the Medical Department of the University of Minnesota.

Without attempting a final summary of present investigations, I would say as follows:

1. In a general way no evidence has been forthcoming that the somewhat lesser frequency of cancer among the white population of the South is the result of *climatological conditions*, as might be suggested by the observed influence of sunlight in certain forms of skin cancers in tropical countries.

2. Contrasting the cancer mortality of Northern and Southern cities, it is shown for the period 1915-1919 that the cancer death rate of *Northern cities was* 94 per 100,000 against 91 for the white population of *Southern cities*, and 68 per 100,000 for the colored population of the same cities.

3. Cancer in the South shows practically the same pronounced *tendency toward an increase*, the rate for 1915-1919 having been 91 per 100,000 against 84 during 1910-1914. A lesser rate of increase is to be observed in the case of the colored population, which during 1915-1919 had a rate of 67.7 per 100,000 against 64.0 during 1910-1914. These rates are for twenty-five representative cities, including practically all important centers of population.

4. For the *State of Mississippi* some unusually interesting cancer morbidity rates are available, likewise indicating a lesser frequency of cancer occurrence in the negro population, although the differences are not as pronounced as would be ex-

pected. The monthly incidence of the cancer reports shows a decrease during the last three years, compared with the previous four years or since the registration commenced in 1914. While the cancer death rates for the State as a whole are much below the average for the South, having been only 39.8 per 100,000 for the white population and 29.4 for the colored population during 1914-1919, the combined cancer death rates for particular cities of Mississippi are distinctively excessive, or respectively, 77.9 for Hattiesburg, 128.1 for Jackson, 87.6 for Meridian, 117.7 for Natchez, and 119.3 for Vicksburg. These rates, of course, are affected by hospital admissions, and probably unduly so on account of the largely rural character of the State.

5. On the basis of a conservative estimate the statement is advanced that the approximate number of *deaths from cancer in the Southern States* during 1920 was 13,600 for the white population and 4,500 for the colored population. It may be conservatively assumed that one-fifth of this amount of mortality can be prevented by known methods of surgical and other timely interference, provided a qualified diagnosis is made at the earliest possible moment and proper treatment is made use of as soon as the existence of the disease is recognized. This would emphasize the importance of a state-wide campaign for cancer control throughout the South, and in a broader sense on account of the larger relative frequency of benign tumors among women of the negro race.

6. The *influence of race* in tumor formation constitutes the major portion of the discussion, which has been largely concentrated upon the extraordinary frequency of uterine fibroids and uterine cancers among negro women. The conclusions are based chiefly upon the ten years' statistics, ending with 1919, of the New Orleans Charity Hospital.

7. In the New Orleans experience the white hospital admission rate on account of *malignant tumors* was 296 per 100,000 patients, while for the colored the rate was 247; but for *benign tumors* the white admission rate was 133 per 10,000 patients, against 455 for the colored.

8. All forms of malignant disease are relatively more common among the white patients except *cancers of the female generative organs and of the breast.* Among the former there was

an admission rate of white patients of 58 per 10,000, against 88 for the colored. For cancer of the breast the admission rate was 21 per 10,000 patients for the white population, against 37 for the colored population.

9. In marked contrast to the former is the very much higher liability of the white population to cancers of the *buccal cavity, stomach and liver,* and particularly the *skin.* For the last named group of malignant affections the admission rate for the white patients was 42 against only 7 for the colored. This result would seem to support the theories of Watkins Pitchfort and C. Norman Paul, according to which tropical sunlight—and possible semi-tropical sunlight—reacts injuriously to the extent of causing malignant skin affections in warm countries.

10. *Benign tumors* are of practically equal frequency as regards the buccal cavity, stomach and liver, peritoneum, intestines and rectum, but this form of tumor growth is a decidedly more common form among negroes in the case of benign tumors of the female generative organs, the respective rates having been 68 for the white patients, against 365 for the colored. Benign tumors of the breast prevailed at the rate of 4 per 10,000 patients among the whites, against 7 for the colored; but benign tumors of the skin, which caused a rate of 16 per 10,000 among the white patients, prevailed at the rate of only 9 for the colored.

11. When the different types of malignant tumors are considered it is shown that the *carcimona* admission rate was 209 for the white patients, against 198 for the colored; the *epithelioma* admission rate was 49 for the white patients and only 10 for the colored; while the *sarcoma* admission rate was practically the same for both races, or 38 per 10,000 for the white patients and 39 for the colored.

12. The *different forms of benign tumors* hardly admit of being reduced to a broad generalization in their racial aspects, but selecting the more important types it is shown that the admission rate for *adenomas* was 4.6 per 10,000 white patients and 6.6 for the colored; *angiomas,* 3.6 for the white patients and 1.3 for the colored; *chondromas,* 2.3 for the white patients and 4.9 for the colored; *cystomas,* 31.5 for the white patients and 28.4 for the colored; *fibromas,* 36.3 for the white patients and 279.3 for the colored; *gliomas,* 5.9 for the white patients and

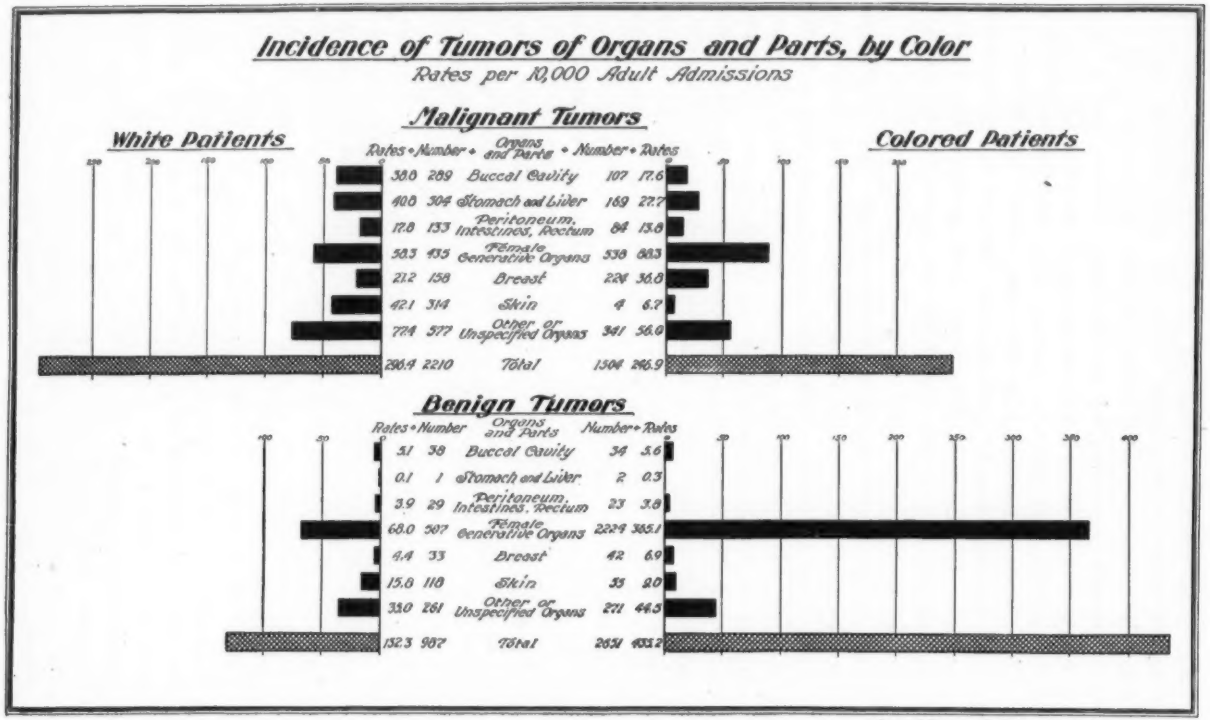
5.4 for the colored; *lipomas,* 8.2 for the white patients and 19.2 for the colored; *lymphomas,* 0.1 for the white patients and 0.5 for the colored; *myomas,* 7.2 for the white patients and 57.8 for the colored; *myxomas,* 6.6 for the white patients and 3.1 for the colored; *neuromas,* 0.1 for the white patients and 0.3 for the colored; *odontomas,* 0.0 for the white patients and 0.3 for the colored; *osteomas,* 0.3 for the white patients and 0.7 for the colored; *papillomas,* 13.1 for the white patients and 18.7 for the colored; *retention cysts,* 7.9 for the white patients and 3.4 for the colored; and *teratomas,* 4.6 for the white patients and 5.3 for the colored.

13. With particular reference to benign and malignant *tumors of the generative organs,* the investigation shows that the frequency rate for cancer of the *uterus* was 145 per 10,000 of white adult patients, against 180 for the colored adult patients; cancer of the *ovaries,* 8 for the white adult patients, against 7 for the colored; all cancers of the female generative organs, 156 for the white adult patients and 194 for the colored. Benign tumors of the female generative organs prevailed to the extent of 181.7 per 10,000 white *adult* patients, against 803.4 for colored adult patients.

14. Cancers of the *male generative organs* prevailed at the rate of 16 per 10,000 white adult patients, and 23 for the colored adult patients. These statistics are probably the first ever presented in detail in this country with due regard to race. Considering the *male ORGAN* separately, or excluding the prostate, scrotum and testicles, the admission rate for this group was 7 per 10,000 white adult patients, against 15 for the colored; but for benign tumors of this organ it was only 4.5 for the white adult patients and 4.2 for the colored adult patients; or for all male generative organs combined the rate per 10,000 patients for the white population was 5.3 and for the colored 6.1.

15. The *fatality rate* from malignant tumors in the experience of the New Orleans Charity Hospital was 21 per cent. for white patients and 19 per cent. for the colored; for benign tumors it was 5.5 for the white patients and 6.1 for the colored. Considering separately cancers of the female generative organs, the fatality rate was 14.3 per cent. for white patients and 11.3 per cent. for the colored; for benign tumors of the female generative organs it was 6.1 for the white patients, against 6.4

Benign and Malignant Tumors
New Orleans Charity Hospital, 1910-1919


Incidence of Tumors of Organs and Parts, by Color
Rates per 10,000 Adult Admissions
Malignant Tumors
White Patients
Colored Patients
Rates · Number · Organs and Parts · Number · Rates
38.0 289 Buccal Cavity 107 17.6
40.0 304 Stomach and Liver 169 27.7
17.8 133 Peritoneum, Intestines, Rectum 84 13.8
58.3 435 Female Generative Organs 538 88.3
21.2 158 Breast 226 36.8
42.1 314 Skin 4 6.7
77.4 577 Other or Unspecified Organs 341 56.0
296.9 2210 Total 1504 246.9
Benign Tumors
Rates · Number · Organs and Parts · Number · Rates
5.1 38 Buccal Cavity 34 5.6
0.1 1 Stomach and Liver 2 0.3
3.9 29 Peritoneum, Intestines, Rectum 23 3.8
68.0 507 Female Generative Organs 2229 365.1
4.4 33 Breast 42 6.9
15.8 118 Skin 35 2.0
33.0 261 Other or Unspecified Organs 271 44.5
132.3 987 Total 2651 433.2

Statistician's Department, The Prudential Insurance Company of America

Benign and Malignant Tumors

Statistician's Department, The Prudential Insurance Company of America

Benign and Malignant Tumors
Charity Hospital, New Orleans, La., 1910-1919

Incidence of Tumors of Generative Organs by Color and Sex

Rates per 10,000 Adult Admissions

Malignant Tumors

White Males	Number	Rate
Generative Organ	34	7.3
Prostate	30	6.4
Testicle	13	2.8
Scrotum	0	–
Total	77	16.5

White Females	Number	Rate
Uterus	405	145.2
Ovary	22	7.9
Vulva	4	1.4
Ligaments	1	0.4
Vagina	3	1.1
Total	435	156.0

Benign Tumors

Generative Organ	21	4.5
Prostate	0	–
Testicle	3	0.6
Scrotum	1	0.2
Total	25	5.3

Uterus	276	98.9
Ovary	159	56.6
Vulva	46	16.5
Ligaments	19	6.8
Vagina	8	2.9
Total	507	181.9

Malignant Tumors

Colored Males	Number	Rate
Generative Organ	49	14.7
Prostate	20	6.1
Testicle	7	2.1
Scrotum	0	–
Total	76	22.9

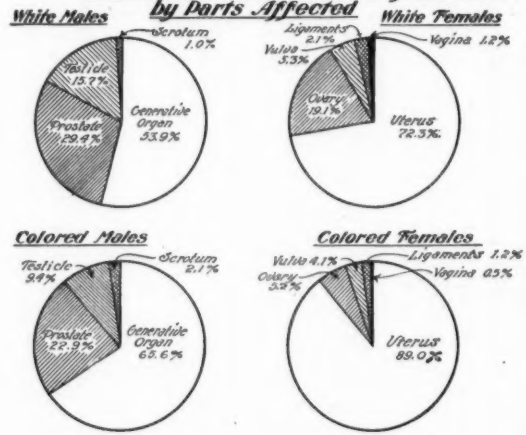
Colored Females	Number	Rate
Uterus	490	100.3
Ovary	18	6.5
Vulva	14	5.1
Ligaments	0	–
Vagina	1	2.5
Total	538	194.9

Benign Tumors

Generative Organ	14	4.2
Prostate	2	0.6
Testicle	2	0.6
Scrotum	2	0.6
Total	20	6.1

Uterus	1939	707.7
Ovary	124	44.8
Vulva	100	36.1
Ligaments	34	12.3
Vagina	7	2.5
Total	2224	803.9

Proportionate Distribution of Tumors by Parts Affected



Statistician's Department, The Prudential Insurance Company of America

for the colored. These figures would clearly indicate that the negro cases received qualified medical and surgical treatment probably as promptly as the white patients.

16. Among other important specialized aspects of the cancer problem, attention is drawn to the apparently *increasing frequency of cancer of the tongue* in its relation to syphilis; to the possible errors of diagnosis in ignoring the *fever factor in cancer;* to the apparent relation of *coal smoke* to cancer causation; to the exceptionally important aspect of *intestinal stasis* as a precancerous condition; and to recent fallacious arguments regarding the alleged dangers of X-ray exposure. All of these are suggestive of the direction in which practical cancer research can be of material importance to the cause of cancer control.

17. There are appended to the paper some supplementary notes on the incidence of tumors among surgical patients treated in the Mission Hospital at Kashmir, with particular reference to *Kangri cancer;* some brief observations on the mortality from cancer in the Island of Ceylon; and also some extended observations on *adenoma of the uterus,* particularly with reference to the work of Dr. Thomas S. Cullen. All of these suggest important aspects of the cancer problem deserving of much more extended consideration, particularly in the South.

TRIBUTE TO DR. F. L. HOFFMAN.

BY RUDOLPH MATAS, New Orleans.

In responding to a call of the Chairman to speak on Dr. Hoffman's address, I feel that all that I can say will resolve itself into an appreciation and eulogy of his splendid work.

My relations with Dr. Hoffman date back a quarter of a century. Our acquaintance had its origin in a common interest in the great racial problems of the South. He was interested in the negro question as a vital statistician by profession, and embraced in his research all the facts that could illuminate the problem as exhibited in the comparative morbidity, mortality, and fertility of the negro race. He studied the African before and after his transplantation to American soil and the influence exercised by his environment upon his physical, economic, social,

and moral evolution; and finally, the reactionary effect of his presence on his environment.

From this high and broad platform he surveyed all the aspects of the problem, and his great work "On the Race Traits and Tendencies of the American Negro", published in 1896 by the American Economic Association is an encyclopedia of incomparable value, bristling with facts, tables, and observations based upon a mass of new statistical evidence gathered from every available world source, in a way that for thoroughness has never been surpassed. If Dr. Hoffman had begun and ended his scientific career with this single publication, it would have sufficed as a lasting monument to his genius as an analytical and constructive statistician.

In 1896, I published a monograph on the "Surgical Peculiarities of the American Negro," an essay based on the statistics and records of the Charity Hospital. It was published in the Transactions of the American Surgical Association for that year. It was an effort to utilize the vast material of that institution on the comparative pathology of the negro from the surgeon's point of view. The paper was already in press when Dr. Hoffman's book came to me, too late to profit by his magnificent researches. I was then able to add only a few supplementary notes which showed that our conclusions harmonized, though arrived at from different angles. This was a source of gratification to me. Incidentally, I had learned to appreciate by a mere taste of the cup of statistical wisdom, what vast labor was necessary for this mode of research and how deep and how far one could dig with profit for hidden treasure with the help of the statistical tool, when this was wielded by the hand of such a master as Dr. Hoffman.

From the day that Dr. Hoffman's great work on the race traits of the American negro came to my hands I have followed his marvellous career with ever increasing admiration. His kindly encouragement, also, at a time when I was, in comparison to his knowledge, a mere boy peering curiously over the fence that bounded his immense possessions, has added a personal note to the general debt that in common with the rest of the profession, I owe him for the educational benefits that have come to us through his original investigations and unparalleled industry.

When we consider the immense scientific and literary output that has continuously streamed from Dr. Hoffman's tireless pen, and the labor involved in its production, in the course of the last 30 years, one stands in wonder at the dynamic energy that lies behind his seemingly frail form, and marvel that one man should be capable of such incessant, diversified and fruitful productiveness. As the years roll by and the tide of his contributions rise higher and higher, I am reminded of a familiar ditty of my school days: "and still the wonder grew that one small head could hold all it knew."

There are no great problems of population, or morbidity, mortality, and fertility which affect the physical, economic, social and moral welfare of the race and of the nation that he has not made a part of his domain and illuminated in some way by the penetrating light of the statistical method. Medicine is especially indebted to Dr. Hoffmann, as witness his studies on tuberculosis, malaria, cancer, leprosy, and what not, which have given him world-wide fame and authority. But apart from the benefit that we as medical men have derived from Dr. Hoffmann's statistical researches, Louisiana owes him a special debt of gratitude for his studies and original investigations on the vital movements of the population of the state; a labor which he has accomplished at the cost of great personal sacrifices. Some of the results of the research which he has carried on for years have been published through the liberality of the Prudential Insurance Company and other publications. But his great work on Louisiana remains unappreciated at its full value in the form of a large typewritten volume which in 1915 he presented to the library of the Medical School of Tulane University where it may be consulted with profit by all students of the sanitary history of this State. It is a unique document, a rich treasury of statistical data and conclusions, nowhere else available, as it is purely personal and the result of the most painstaking investigation of the vital statistics of this State from the earliest colonial days to the present. The document is too valuable to remain idle in its unpublished form and should be printed, as we hope it will soon, for general circulation as a public document by the State government.

The statistical lessons brought out by Dr. Hoffmann in this evening's lecture emphasize the importance of the Charity Hospital as a repository and center of information on all ques-

tions related to comparative racial pathology. The outside world with good reason, expects the Charity Hospital to provide accurrate collective information on questions which involve the comparative pathology of the negro and we should be prepared to furnish this information whenever obtainable within the limits of our experience.

Only a few days ago, I received a letter from the Chairman of the Committee on Anesthesia of the Medical Society of Ohio, in which he asked for our experience on the relative fatality of anesthetics in the negro as compared with the white. He wrote that the question had been suggested by the statement of a prominent surgeon of national fame, in Ohio, that the negroes are not as amenable to general anesthetics as the whites. He cited the case of a negress suffering from a hyperthyroidism who died on the table while under gas-ether-oxygen anesthesia, preparatory to a goitre operation. The surgeon in attendance was inclined to attribute the anesthetic death to race idiosyncracies. The Chairman of the Committee was interested in getting out local experience in this matter, but we were not able to furnish any collective statistical data and only our opinion based upon individual experience. This experience, I am sure, will show that in equality of circumstances there are no differences between the white and black races in the effects of anesthetics. But we should have been prepared to prove or disprove this assertion by the collective experience of the Hospital based upon the statistics of the recorded anesthesia deaths or, at least, the deaths on the table that could be legitimately attributed to anesthetics alone. Steps have been taken to improve the records by a separate tabulation and analysis of the causes of death on the operating table, including the so-called anesthetic death as exhibited in both races. This incident is mentioned in no spirit of criticism of the Hospital records, but merely to show the importance of the Charity Hospital as a source of authoritative information in the eyes of the outside world. The Charity Hospital with its immense and available data, properly compiled, tabulated and edited in its yearly reports, as brought out by Dr. Hoffmann, could and should be one of the world's greatest repositories of information on living racial pathology.

It is given only to a few to possess the key to the statistical method and to handle it with that mastery that is necessary to unfold great and illuminating truths and generalizations, but

none of us can fail to appreciate the results obtained by the statistician's labor. As medical men we are grateful to Dr. Hoffmann for coming here tonight to emphasize many of the lessons that we had gathered from his teachings in the past and to supplement these with the added results of his latest investigation, thus confirming the high estimate that the medical world has given to his unfailing sympathy and unflagging interest in our most difficult professional problems. What we can do and should do is to follow his suggestions for the betterment and completeness of our institutional records so that these may prove still more helpful to ourselves and to the scientific world.

NOTE:—
Preliminary report on the Health Conditions in Louisiana, 1770-1877.
Preliminary report on the Health Conditions in Louisiana, 1878-1907.
Vital Statistics of New Orleans, 1787- 1909.
Three bound volumes presented by the Prudential Ins. Co. of America, Frederick L. Hoffman, Statistician, November 13th, 1913.

PROCEEDINGS OF THE STAFF OF TOURO INFIRMARY.

MEETING OF APRIL 13, 1921.

(CONTINUED.)

DR. J. P. LEAKE: I merely want to report a few experiences of the past winter where measles seemed to play some unusual pranks. It is understood that the rash of measles is supposed to appear later than in other exanthemata, 72 hours being the time described by old text books. However, we have all had to wait four or five or even six days in some instances before our diagnosis was confirmed. In the cases I have in mind, it was not so much the question of the time required for the eruption to appear as it was the influence on symptoms presented before any evidence of measles was noted.

The first of these cases was that of a boy who was brought to my office about two years ago, his parents having noted that his hearing was very defective. He was a typical mouth breather, with enlarged tonsils and adenoid. After correcting the condition in his throat, his hearing became normal and remained so about eight months. A slight cold blocking his Eustachian tubes made it necessary for him to return for treatment at the expiration of that time. His hearing appeared very bad; he could not hear the voice in ordinary conversation, nor could he hear a loud ticking watch except on contact with bone. This condition was remedied immediately upon gentle inflation; a few visits only were necessary. After a few months, however, he was brought back but was relieved as promptly as on previous occasions. About six weeks ago, he returned, his hearing being defective again. Upon inflating his ears, his hearing was normal immediately and remained normal for two days whereupon he returned for further treatment, the result being the same. He came the next day, however, saying his ears were blocked again. There was not any apparent result from inflation. He came every day for about twelve days and left the office without any benefit. His parents became very much discouraged and so did I. Two days after his last visit his mother phoned saying he was confined to his bed with measles and asked what should be done. She was advised that it would be impracticable to carry out any treatment at the time but was requested to let me know if he had any pain in his ears. About eight days later

having recovered from measles, he was brought back. His hearing cleared up immediately on inflation and has remained normal since. I would not know how to account for the obstinacy of this last attack unless it were caused by the impending attack of measles.

The next case is that of a little girl living a few blocks above. I was asked to see her and called late in the afternoon after my office hours. Her sister, a professional nurse, was very much disturbed because the attending physician, unable to call that day, had sent an associate, who had pronounced the case "pneumonia". The pneumonia was very apparent. From the history, I learned that the child had been in bed five days with fever. Having been exposed to measles, and as measles was prevalent at the time, it was thought that that was what was in store for her. Her physician had gone over her carefully every day without any definite findings. The child had complained of pain in her ears on the previous night which accounted for my being called in. Upon examination, I found a double middle ear abscess. The child was so profoundly toxic, I thought it inadvisable to give an anesthetic. A double parancentesis was done, the child scarcely rousing when the drum membranes were opened. She went through five rather stormy days and nights, whereupon her temperature became normal and her lungs began to clear. As her ears were draining satisfactorily, I discontinued my visits. About a week later, I was requested to see the child again. Upon calling I found her covered with the rash of measles. In this case, it seems to me that the complications and sequela preceded rather than followed the measles.

Dr. I. I. Lemann: Unfortunately, the patient whose case I wish to report has not come tonight, although he promised to do so. This young man was formerly a helper in the pharmacy here about 1916. He was brought to the Medical Clinic a number of times and he was then complaining more of constipation than anything else and loss of appetite. He was a fresh immigrant from Russia.

A few months later he was admitted to the ward because he continued to lose weight. A diagnosis of pulmonary tuberculosis was made upon the basis of physical signs and positive sputum findings. He was sent to Covington in October, 1916.

He had had pulmonary hemorrhages for three days. While he was in Touro and before he was sent to Covington, glycosuria was noted and from the time he was admitted to Touro in 1916 to the present, I have seen him nearly once a year except during the period that I was absent in the service. The boy who is now 26 years old had quite an extensive tuberculosis of both lungs and particularly of the right lung and, during the first four years, the tuberculosis was active. Rales could be heard, and he continued to have a little fever all the time, but, in spite of that, he gained strength and weight. For example, he weighed 118 in 1919 and two years later I found he weighed 154 lbs. Each time there were traces of sugar in the urine. Last year, he reported and I found he had gone up in weight still further so that he weighed around 160 lbs. The tuberculosis was still active and he still had glycosuria. He came back last year and at that time I suspected that we were not dealing with a true diabetes mellitus. I had a blood determination made on a fasting stomach in 1920 and the reading was normal, one-tenth of one per cent. I wanted him at that time to permit a blood sugar curve to be made but he would not submit to it. I have been successful this past week in having such a curve run and it is extremely interesting to see that while he has traces of sugar in his urine almost constantly—and without regard to the food at all, his blood sugar content is normal and the blood sugar curve shows that he has a low renal threshold. There is no plateau in the blood curve such as we see in the true diabetic. Here is his curve (curve shown). It starts off with a blood sugar with less than normal—of .076 on a fasting stomach with no sugar in the urine. At the end of half hour, the blood sugar had gone up to .13 which is below the normal renal threshold. The normal has been worked out to be around from 16 to 17 hundredths per cent. Nearly three per cent sugar appears in the urine. The blood curve immediately falls and at the end of three hours has reached its former level of .07. In the meantime, sugar in the urine has disappeared so that it has reached its nil point at the end of three hours. If this had been a true diabetic, his blood curve would have risen promptly but would have remained up for several hours and then have made a very gradual descent.

The interesting point from a scientific point of view is that we should have expected in the true diabetic combined with

a tuberculosis a fatal result long before this. From a very practical standpoint, this young man has been maintained by the Charities in part and part by Touro. If he had tuberculosis and diabetes, we should expect him to be absolutely helpless and the Charities and Touro would be justified in maintaining him. This young man can be justly expected to earn his own living.

In this connection I have a number of blood sugar curves which will illustrate other interesting points. One of them is the blood sugar curve in a case of pregnancy. This lady was sent to me in the seventh month of her pregnancy because shortly before she had developed a glycosuria—not a lactosuria—and she had been very sharply restricted in her diet and fed very largely on fats so that when she came, she had acetone and diacetic acid in her urine but with no sugar. We found, in the course of a few days' observation that the change of diet had very little relation to her glycosuria which was never more than a small trace while she was here.

A blood sugar curve on her showed a perfectly normal curve going rapidly up and rapidly down. This lady's glycosuria was dependent upon what has been demonstrated in the last four or five years, namely, a lowered renal threshold in pregnancy. She was told to go home and given a very liberal diet. She was delivered of a healthy child and has remained free of glycosuria since. This makes a tremendous difference in the outlook of patients' glycosuria in pregnancy. I have the pleasure next week of presenting a paper at the State Medical Society meeting on "Diabetes in Pregnancy" and I shall try to show there is considerable difference in the outlook of pregnancy occurring in women already diabetic and glycosuria occurring in a pregnancy for the first time. It seems from a review of the recent literature the type of renal diabetes in pregnancy is very common. Perhaps, it is a normal occurrence and should not cause alarm. In a woman already diabetic, pregnancy is very serious. Even there, I might say parenthetically, straying a bit from my subject, that the occurrence of pregnancy in a woman already diabetic is not always the matter of dire import that has hitherto been thought. I have in my records a case of pregnancy in a young woman already diabetic where the glycosuria really disappeared during pregnancy to reappear after the pregnancy was over. The carbohydrate tolerance was increased during pregnancy. At least half a dozen such cases are in the literature.

She was delivered of a healthy child and lived for four years after confinement and might not have died then if she had lived reasonably within the rules.

It seems to me the care of diabetic pregnant women is more hopeful than we have hitherto thought. The matter of these blood sugar curves is also of considerable importance when we have to deal with persons who have occasionally a trace of sugar in their urine. For example, a young woman came because she had been rejected by a life insurance company on application for a policy. It was possible to show in her case that the blood sugar curve was absolutely normal, and she was not a true diabetic. Recently, a man who had had his toe bruised by having some heavy object fall upon it came to me. He had been under the care of a prominent surgeon for several months. It seemed to be nothing more than a bruise under the skin, but the toe was sore. The man had no sugar in his morning urine, but had sugar in his urine after a heavy meal and it seemed to me at first there was some relation between the glycosuria and the failure of the toe to get well. Presently, the toe did get well on restriction of carbohydrates. However, his blood sugar curve was normal and I don't believe this man represented more than a lowered renal threshold. The failure of the toe to get well had nothing to do with the occasional signs of sugar in the urine. A lowered renal threshold is much more common than we think.

It is possible that cases we call alimentary glycosuria are not disturbances of liver, and are certainly not true diabetes, but may be due to an increased renal permeability.

DISSCUSSION.

DR. LANFORD: Dr. Lemann has shown clearly the importance of the study of the blood sugar content in those cases in which sugar appears in the urine. This study in conjunction with the percentage of excretion which takes place in the urine was first worked out by Hamman and is known as the "Hamman curve." It has been shown that sugar may appear temporarily in the urine under certain conditions and, therefore, it is important to determine whether a glycosuria is temporary or is actual evidence of a pathological condition. It is of importance to determine this for several reasons, chief of which is from a standpoint of prognosis and treatment. In addition, it occasionally

happens that a man applying for life insurance will be declined due to the fact that he has reducing substances in the urine. I had an opportunity to assist a prominent man in obtaining an increase in his insurance some time ago. This man had been declined for life insurance because he had a transient glycosuria but it was shown this condition was due to an error of diet and not to a pathological condition in his organs. The plan followed in the laboratory of Touro Infirmary is to determine the body weight of the patient in kilograms. The patient is not permitted to take any food or water in the morning, and his blood and urine are taken in this state of fasting. He is then given one and seventy-five hundredths grams of dextrose per kilogram of body weight dissolved in sufficient water not to be nauseating and this followed by enough water to make his entire intake 500 cc. Blood is taken at the end of one-half, one, two, and three hours after the dextrose meal and the patient is requested to pass all urine at the same time. The amount of sugar is determined in the blood by the Folin-Wu method and the amount of sugar in the urine determined by Purdy's test. Results have been quite gratifying and have been well explained to you by Dr. Lemann.

The Chemical division of the Laboratory is under the immediate charge of Dr. M. P. H. Bowden.

Dr. J. B. Guthrie: The examination of blood for sugar content has become a relatively simple procedure of clinical laboratory work. I have worked out a little modification of the technique which has been of assistance to me in using the smaller apparatus. A few grains of powdered potassium oxalate are put into a watch glass and the patient's blood, obtained by needle puncture of the finger, is expressed into the watch glass. The potassium oxalate is stirred into the blood with a small rod and the watch glass set aside under cover, its contents to be examined within a short time.

I have seen patients who have objected to the repeated venous puncture for obtaining serial blood examinations but who apparently did not oppose the needle puncture for the same purpose. We are all agreed as to the diagnostic value of the curve of blood sugar after the test meal of glucose. There surely could have been no correct conclusion reached regarding Dr. Lemann's case except after the blood sugar estimation was made.

DR. C. J. MILLER: My experience with cases of pregnancy complicating diabetes has been limited, but it has been different from the report given by Dr. Lemann. We do not see so many of these cases because a great many diabetics appear to be sterile so, therefore, one practitioner would not have sufficient material from which to draw definite conclusions.

The effect on the child is of interest. In practically 20% of the cases, the children are either born prematurely and do not survive and the mortality after pregnancy is over is also high. It is very common to find a trace of sugar in the urine in the last two months of pregnancy. This should be borne in mind as it could be very confusing both in the management of the case and the prognosis. I agree with Dr. Lemann that these cases should be carefully investigated because many of them are nothing more than lactosuria while others may have a serious ultimate result.

DR. J. W. NEWMAN: Were any observations made on colored women? I think it is remarkable that we should see such a large number of cases of Glycosuria in the colored; it is entirely out of proportion to the number seen in the colored male. We have had in the Lying-in Hospital not less than 50 cases show sugar in the urine on routine examination. Our results have been most gratifying; contrary to what Dr. Miller states, the majority of them have carried to term and in the few cases where labor has set in before term, i. e., in the seventh or eighth month, it was due to other causes, with the diabetic contributing. As far as the life of the children is concerned, they have lived and no increase in the mortality noted from patients suffering from glycosuria. No precaution is taken—because a large number of cases, no matter how we tried to impress it upon them, did not follow our orders as to diet. In the last group of cases, we gave no orders and results were just as good. All of the cases, with one exception, cleared up without treatment.

DR. C. J. MILLER: I should like to ask Dr. Newman whether the cases he reports were lactosuria or glycosuria? I am rather surprised to hear such a large percentage of cases in a limited service. Since there is a trace of sugar in such a large percentage of cases towards the end of pregnancy, it is possible that many of them were cases of lactosuria and of little conse-

quence. It would be interesting to know how many of Dr. Newman's cases were true diabetics.

DR. NEWMAN: In the majority of cases, there was no sugar before but found from three or four months on.

DR. I. I. LEMANN: I think that Dr. Miller is correct. In stressing the fact, I may have understated the seriousness of diabetes in pregnancy. While certain collections in the literature indicate what Dr. Miller says is his experience, that is about 25 per cent. of the mothers die during pregnancy or during labor and about an additional 25 per cent more within two years after confinement, still these collections antedate modern methods of treatment. It seems to me that in view of more recent experiences, we shall be rather more hopeful about the outcome of pregnancy in diabetic women when it does occur. For example, Van Noorden reports he had not seen any unfavorable influence upon the diabetics in pregnancy or puerperium in five women coming under his observation. Allen working with dogs has not been able to see that diabetes increases the severity and Joslin suggests that the aggravation of the glycosuria may be due to overfeeding rather than to the course of the pregnancy. The future handling of pregnant diabetic women may, therefore, proceed along different lines than that advocated in the texts. One sees repeated suggestions that pregnancies should be at once terminated, especially in early months in women previously known to be diabetic. Naunyn stated that he did not think that pregnancy should be interrupted except for good cause, such as the increase of glycosuria beyond control or increasing weakness or the occurrence of polyhydramnics which occurs frequently in pregnancy.

My own experience is not large, but the few cases I have seen make me feel more hopeful and believe that we should not advocate termination of pregnancy.

As regards lactosuria versus glycosuria, that differential diagnosis has not always been made. When it has been carefully made, as by Ney, for example, it was found that only 16 per cent of pregnant women showed lactosurias while 77% of women in the puerperium and at the time of labor showed lactosuria.

One further word of caution even about my case. These women who have shown glycosuria in repeated pregnancies must not be taken to represent necessarily innocent affairs. Fos-

ter for instance has reported a case where during two pregnancies a woman had apparently transient glycosuria, an innocent affair. In the third pregnancy, she developed intolerant thirst and other manifestations and after this pregnancy did not get rid of the glycosuria and finally became a confirmed diabetic. Not until the obstetrician joins hands with the internist in differentiating these various glycosurias shall we be able to clear up the confusion now existing. Even standard text books such as De Lee advocate routine termination of pregnancy in diabetics while practically all of the leaders in the investigation of diabetes from the time of Naunyn to Joslin are against interrupting pregnancy.

Dr. A. B. Pitkin: It is my pleasure tonight to exhibit the Benedict metabolism apparatus with which the basal metabolism is determined in a practical way without any sacrifice of its value within normal clinical error, to point out the possible sources of error and how they may be overcome and finally to report on a few cases which have come under my observation during a series of determinations which will no doubt be of interest to you and demonstrate its clinical value as well.

By "Basal Metabolism" or "Basal Metabolic rate" is meant the minimal heat production of an animal measured 12-18 hours after the ingestion of food and when at complete muscular rest. With this apparatus the heat production is determined specifically from the gaseous exchange within the body of the oxygen consumed and the carbon dioxide produced; the determination of the total nitrogen in the urine, regarded as a negative factor for ordinary clinical use, is omitted.

With an increase in the metabolism, there is naturally an increase also of the oxygen consumed and carbon dioxide produced in the individual which is in proportion to the increase in metabolism. Lavoisier in 1780 discovered and named oxygen and only in last decade has it been demonstrated that the oxygen requirement was greater in a fasting subject at work than when at rest and also that the requirement was greater after the ingestion of food. Likewise in pathological conditions which alter the body chemism there is a disturbance of the gaseous exchange of oxygen and carbon dioxide in proportion and a greater or lesser amount of oxygen is required dependent upon the character of the alteration. The determination of the basal

metabolic rate, therefore, is a valuable aid in the interpretation of any state. Determining the oxygen consumption in a given time, the heat production, equivalent to the metabolism of the body, is very easily determined and by comparison with the normal standard for the individual case, any variation is noted.

The Benedict apparatus is of the "closed-circuit" type into which the patient breathes oxygen of a known amount. A spirometer, containing the oxygen, is inserted in the circuit which acts as a breathing chamber, rising and falling with respiration; a thermometer inserted in the spirometer makes possible the observation of any changes in temperature of the oxygen. The gasometer is calibrated in cubic centimeters and the readings are made at the end of normal expiration. The apparatus is adjusted to the patient by means of a rubber mouthpiece and nose clip. A jar of soda-lime inserted in the circuit absorbs all of the carbon dioxide produced and by means of a blower the contents of the spirometer are made to pass through the soda-lime about three times a minute. The loss of oxygen in the spirometer after a determination is made, accurately represents the oxygen consumed in a given time. It is necessary to know the heat value of the oxygen consumed and this is determined from the respiratory quotient, that is, the quotient of the carbon dioxide produced divided by the oxygen consumed. The respiratory quotient is not determined in each individual case, as Benedict found that an average respiratory quotient of 0.82 was very constant, and it is used in the determination; this quotient responds to the caloric value of 4.825 per liter of oxygen. Two corrections are necessary—temperature and barometric. DuBois in 1915 demonstrated that the heat production of an individual was proportional to the height and weight and after actual measurement of a number of subjects, he devised a formula with which the total square meters of a surface area may be determined with the weight and height known. Later Aub and DuBois constructed a chart from this formula by means of which the surface area can be estimated at a glance. With the use of this chart, Aub and DuBois constructed a series of normal standards for age and sex and it is with these standards that we compare the metabolic rate determinations. It is possible in this way to arrive at the metabolic rate of a patient within plus or minus 10%, so that observations within this limit are regarded as normal. The total oxygen consumption, correct-

ed, multiplied by the caloric value of oxygen at the average respiratory quotient gives the total heat production for one hour; this divided by the surface area, taken from DuBois' chart gives the metabolic rate expressed as "calories per square meter per hour." This then compared with the normal standard gives any variation that is present. The physic side or "personal equation" plays a big part in correct observations and co-operation is essential; it can be plainly seen what havoc would result from irregular respirations particularly at the end of an observation; also any movement which would disturb the complete muscular rest which is essential or undue apprehension and nervousness on the part of the patient; especial care must be taken to guard against leaks in the apparatus and around the mouthpiece or nose clip as the loss of oxygen in the spirometer during an observation is all charged up to the patient, called oxygen consumed, and is the basis of the calculation of the heat production or metabolism; other sources of error of course are readings on the gasometer and the thermometer.

The determination of the metabolic rate has a fixed position in medicine, despite the sudden widespread clinical interest displayed which usually attends something "new" not only because of its aid in diagnosis but also in the treatment of many conditions. Just as the thermometer is valuable in separating cases into two great groups, febrile and afebrile, so the metabolic rate determination has its value in separating the cases into three classes—those with normal rate, increased rate and decreased rates. A few cases have come under my observation which bring out very clearly the value of this determination and I will briefly report them to you:

Case 1. Diagnosis—Exophthalmic Goiter—duration 7 years; started with "nervous breakdown"; lost 20 pounds; noticed enlargement of thyroid and shortly afterward the exophthalmos. Dizzy spells on least provocation which last for over a week; has been practically in bed since this time; has had X-ray exposures with apparent relief. Marked tremor, sweating and flushes; Von Graefe's sign; Pulse 120-130. Goetsch test markedly positive. Age 35 years. 2/16/21-B. M. R. plus 71, Pulse 130. Complete rest in bed with sedatives; 2/23/21-B. M. R. 36%, Pulse 112, R. 16. Cuneiform section of both lobes leaving approximately 1/4 of gland on 2/24/21. Discharged on 2/28/21 after an uneventful convalesence (maximum temperature 101 degrees; pulse 140 for 36 hours following operation, then gradual reduction in rate) B. M. R. at this time, plus 19.5%, Pulse 102, Respiration 21. 3/23/21 (5 weeks post operative)—B. M. R. plus 16%, Pulse 82, Resp. 16. Tremor slightly noticeable; patient feels a great deal relieved; has been to the picture show several times without disturbance of any kind. This case was so toxic clinically that ligation after a preliminary rest

was decided upon to precede thyroidectomy if reduction in the toxicity resulted; with the improvement shown by the metabolic rate determinations, thyroidectomy was performed without ligation; a typical though not severe reaction (thyrotoxicosis) followed but the patient made an uneventful recovery and continues to improve.

Case 2. Diagnosis—Fetal adenoma associated with hyperthyroidism. Age 36 years. Since 5 months, the patient is seized with sudden attacks vertigo lasting 6 hours; has noticed a slight swelling of neck particularly on right side of neck for several years. Subject to flushes and sweating on least provocation. Pulse 120. B. P. 120/70. 2/24/21 plus 28% P. (I. 20) R (I. 9) Thyroidectomy 2/15/21; 2/25—7.3% P. 104, R. 21.

The following are two examples of the so-called borderline cases:

Case ‡48. Age 25. Duration 11 years. (since puberty). No enlargement of gland; crying spells; nervousness; flushes; tremor. 4/2/21-B. M. R.—12.7%.

Case ‡38. Age 29 years; slight enlargement of thyroid. Duration 2 years. Nervousness. Flushes; weakness; slight tremor; Goetsch test mildly positive. 3/21/21, B. M. R. plus 22.2, P. 76, R. 24.

The next three cases are of interest because it brings out a plea for an answer to the question which has strong supporters on each side. One side is supported by Goetsch who claims that the commonest type of goiter with hyperthyroidism is the "diffuse adenomatosis" type, and in this type which presents remissions of symptoms although the pathology remains the same, will react positively to the epinephrin hypersensitiveness test while the metabolic rate is normal or low and is, therefore, the most reliable; the other side is supported by Boothby who insists that a negative metabolic rate rules hyperthyroidism out completely regardless of the clinical side of the case including the epinephrin hypersensitiveness test.

These cases present many of the earmarks of hyperthyroidism and yet present a markedly negative metabolic rate; in all of the three cases mentioned, the absence of hyperthyroidism was accepted:

Case ‡25. Age 30. Slight enlargement of thyroid; nervousness. Crying spells. Marked weakness. Loss of weight. Fairly marked tremor. Markedly Goetsch test. Clinical diagnosis—Mild toxic goiter (hyperplastic). 3/6/21—B. M. R.—46, P. 76, R. 24.

Age 41 years. Duration of symptoms 4 months. Sudden onset. Palpitation of heart 4 years following birth of child, more marked on exertion. Tonsillitis in Nov., 1920. Following noticed extreme nervousness which has not improved. Marked tremor. Marked loss of weight. Markedly positive Goetsch test. Tachycardia 130. Loud aortic murmur. B. M. R. 10.5% and 3.2% (observations 2 days apart.)

Case ‡5. Duration 3 years. Age 24 years. Sudden onset. Periodic attacks of tachycardia associated with dyspnea; marked tremor which is general. This patient was worked up in detail and sent

to the doctor in charge with a positive diagnosis of exophthalmic goiter with everything complete and positive (including the Goetsch test) for hyperthyroidism, with the exception of a metabolism rate determination. The attacks which the patient had while under observation in the hospital were very transient, epileptoid in character; the Goetsch test performed by Drs. Gage and Field was negative and metabolic rate was -1.3% which is well within the normal limits of variation.

Case #8. This patient is very interesting from several viewpoints; she has definite clinical signs of being a case of hypothyroidism, in addition having a lowered mentality in the opinion of a neurologist. Apathetic and drowsy. Another point of interest—in the scale of standards for the normal metabolic rates according to age and sex (by Aub and DuBois) the youngest subject given is from 14 to 16 years of age, and the younger the patient the higher the metabolic rate, and this little patient is 10 years of age, and her metabolic rate variation was made by comparison with the standard for 14 years of age; the point to be brought out is that after several observations while under treatment she has improved to the point of showing a metabolic rate of a plus variation; Goetsch claims that a hypothyroid case should be given thyroid until the metabolism reaches normal and the epinephrin test is slightly positive; the latter has not been performed on this patient; the patient has changed in metabolic rate from -40.5% to plus 19%; the following observations have been made:

3/5/21, B. M. R. 40.5%; 3/22/21, B. M. R. -29.2%; 4/5/21, 4.8% 4/13/21 plus 19%. If the metabolic rate increases as the patient is younger then this is not the true status of affairs and the patient is not truly running a plus metabolism; since the first observation, the patient has been getting one grain of thyroid three times a day (Armour's preparation) and I am at somewhat of a loss to know how to instruct the doctor as to his procedure of treatment; conservatively, I have advised him to reduce the dose of thyroid, pending an epinephrin hyposensitiveness test, to gr. 1 a day for a period of a week and then make another observation on the metabolic rate.

Discussion.

Dr. C. S. Holbrook: I would like to go into details about the last case which Dr. Pitkin mentioned. The work that he has done in establishing the metabolic rate has been of great assistance in directing the treatment of this child who is now a girl of ten years. The patient is the second child and was a full-term baby, was delivered without the use of forceps and nothing abnormal was noticed at the time of her birth. She was somewhat slow in developing, sitting up at eleven months, walking at sixteen to seventeen months, though she said a few words before she walked. Her habits were quite easily regulated along normal lines.

She was considered normal until she went to school some four years ago. Then it was noticed that she "learned nothing the first half of the year, was very bad, did not mind and would not study at home." She was seen at this time by a physician

and was given thyroid. She did very much better in every respect. For the past two years it has been noticed that she has done very well indeed when she was given thyroid and that her deportment and work at school were very poor during the time when she was not given the glandular extract.

The physical examination shows a large and rather well developed girl of ten years. She smiles in a silly manner and without cause. She is almost constantly moving in her chair or playing with her fingers. The thyroid could not be felt. Hair not coarse, skin normal. Examination otherwise was negative. A Binet-Simon test gives her a rating of nine years which is not especially bad.

With a history of the improvement that has followed with giving her thyroid, it was decided to make a careful examination with the use of the Benedict Metabolism Apparatus. Dr. Pitkin has conclusively demonstrated that this child is suffering from hypothyroidism, or deficient thyroid secretion. As will be seen at the first observation, she was well below normal, the rating being a minus forty. Since then, she has been on three grains of thyroid extract (Armour) per day and one will readily see what change has taken place. From a minus forty metabolic rate, she has progressed to a rate above normal. In the past, the therapy in these cases has been along anything but scientific lines. It has been rather customary to give an indefinite amount of thyroid, the amount varying very much according to the idea of the physician in charge. Treatment was generally given for a very indefinite period. There was no way to tell when sufficient had been given though we do know that occasionally toxic symptoms would indicate that too much had been given.

Now we have a scientific gauge or means of telling when therapy with thyroid is indicated and how much thyroid extract is required to keep a person in proper endocrin balance. In this particular case, we expect to do a number of estimations of the metabolic rate until we find what amount of thyroid extract she requires to keep the metabolic rate approximately normal and after this is established, treatment will be continued for months or years with an occasional examination with the Benedict Apparatus. We thus see that this form of treatment can be placed on a scientific basis and I believe that greater benefit in hypothyroid cases may be expected in the future.

Concomitantly with the approach to normal as indicated by the metabolism estimation, the conduct and the school work of this child have gradually improved until now she does her chores about the house with very little difficulty, dresses herself in considerable less time than formerly and gets her lessons with less prodding, although she is still considerably slow in most of her actions.

DR. RANDOLPH LYONS: The subject is so large that we can never get to the end of it, but it is interesting to note in the literature the conflict between the school which employs the basal-metabolic rate and that which depends mainly upon the Goetsch test. The followers of the Goetsch test seem to have faith in this test, but they do not deny the value of the metabolic tests. The basal metabolism school denies the value of the Goetsch test. It has been seriously questioned whether the epinephrin reaction is pathognomonic of hyperthyroidism. It signifies that there is a hypersensitiveness of the sympathetic system but not necessarily a hyperthyroidism proper. One of the cases reported by Dr. Pitkin was a patient of mine, that of a young girl 25 years old who developed a goitre at 15. During the last few years, she has developed nervousness, slight tremor of the fingers and some loss of weight. I suspected a possible hyperthyroidism but her metabolic rate turned out to be low. It is interesting in her case because it seems for some years when she was living in New York she was given thyroid. Some doctor apparently considered her a case of hypothyroidism. She did not think this thyroid medication did her any good; she lost flesh and finally dropped the medicine. I have not made any epinephrin test upon her yet but I intend to do so.

ANALYSIS OF HOSPITAL SERVICE.

(Representing all discharges in March, 1921.)

DEPARTMENT	INFECTIONS	DIAGNOSES			DEAD 48 hrs.	Total DEAD
Ear, Nose and Throat	147	134	7	5	0	1
Eye	30	10	17	3	0	0
Gastro-Intestinal	38	6	25	7	0	0
Gynecological	103	54	35	11	1	3
Medical	54	8	25	13	3	8
Neurological	13	1	5	7	0	0
Obstetrical	50	41	2	4	1	3
Newborn	32	32	0	0	0	0
Orthopedic	12	1	7	3	0	1
Pediatric	9	0	5	3	0	1
Skin	1	1	0	0	0	0
Surgical	180	86	72	13	3	9
Total	669	374	200	69	8	26

DEPARTMENT	INFECTIONS		DIAGNOSIS				Con-
	Insti.	On Adm.	Agree	Disagree	Addl.	Tent. not given	sulta- tions
Ear, Nose & Throat	....	....	143	4	0	0	2
Eye	....	....	28	0	2	0	4
Gastro-Intestinal	....	....	31	2	3	2	4
Gynecological	....	....	82	9	12	0	1
Medical	....	....	44	5	4	1	9
Neurological	....	....	11	2	0	0	6
Obstetrical	....	....	49	1	0	0	1
Newborn	....	....	32	0	0	0	1
Orthopedic	....	....	11	1	0	0	0
Pediatric	....	....	7	2	0	0	2
Skin	....	....	1	0	0	0	0
Surgical	1	1	157	14	8	1	7
Total	1	1	596	40	29	4	37

Caesarian Section	2
Multiple	0
Breech, Footling, etc.	1
High Forceps	0
Mid Forceps	0
Low Forceps	2
Stillbirth	1

NEWS AND COMMENT.

TULANE UNIVERSITY COMMENCEMENT EXERCISES. Tulane University held its annual commencement exercises on June 8, graduating over 250 students in the various departments of learning. The School of Medicine conferred the degree on 111 graduates, while there were 15 on whom the degree of Graduate in Pharmacy was conferred, and 2 who received the degree of Pharmaceutical Chemist. The School of Dentistry had 14 graduates. The Graduate School, through its Dean, Dr. Chas. Chassaignac, reported an attendance of 221 students representing 30 states of the Union and one foreign country. The states ranged from Oregon to Washington in the Northwest, to New Hampshire in the Northeast, and California in the Southwest and Florida in the Southeast.

"RADIO ELEMENTS AND THEIR APPLICATIONS." This is the title of a lengthy review to appear in the July issue of the *Medical Review of Reviews*, an original contribution by Mme. Curie and it is said to be the first and only contribution which this noted scientist has made to an American publication and for that reason is extremely valuable. A number of the July issue containing the article will be sent gratis to any physician making the request. Address the Medical Review of Reviews, No. 51 East 59th Street, New York.

PEKING UNION MEDICAL COLLEGE. The following announcement is made by the Faculty and Trustees of the Peking Union Medical College: The dedication of the buildings of the Peking Union Medical College will take place in Peking, China, and at the same time a medical conference will be held from September 15 to 22. The inauguration of the new President, Dr. Henry Spencer Houghton, will form a part of the meeting and it is expected that scientists from various parts of the world will attend.

THE MULFORD BIOLOGICAL EXPLORATION leaves America on June 1 to disembark at Antofagasta, Chili, from there to go to La Paz, Bolivia, and thence on its journey through a practically unknown region of that section of South America to the Madeira and Amazon Rivers. The general purpose of the expedition is to seek new information concerning useful drugs and ingredients of value to medical and pharmaceutical science.

Dr. Frederick L. Hoffman, Vice President and Statistician of the Prudential Life Insurance Company will join the expedition, which is under the leadership of Dr. H. H. Rusby.

NINE NEW PUBLIC HEALTH SERVICE HOSPITALS have been added to the hospital program of the United States and it is expected that these will accommodate more than 3,000 people. Three of these are in Iowa, Montana and Oregon, which will be ready within two months. Others will not be ready for some time. Walla Walla, Washington; Chicago; Fort McKenzie, Wyoming; Fort Logan H. Roots, near Little Rock, Ark., are sites at which either new preparations are being made for the accommodation of patients or the hospitals already in operation have been abandoned because of insufficient accommodations, but will now be restored to their former use. A Naval Station at Gulfport, Miss., has just been taken over by the Public Health Service and will be utilized as a hospital, or maybe a home for some branch of the service.

PHILADELPHIA COLLEGE OF PHARMACY. The plans for the raising of a $2,000,000 fund for the purchase of a new site and the erection of suitable buildings for the Philadelphia College of Pharmacy have been postponed since the inauguration of Admiral W. C. Braisted, M. C. U. S. Navy (Ret.) as President of that institution. The extensive preparations which had already been made will not be wasted as the local and national organizations will be held in their present form to function at a future time to be fixed later on. Only the fund raising movement is postponed. The Centennial celebration and all things incident thereto will proceed according to the program.

HIGH MORTALITY RATES. The U. S. Department of Labor released for public information on June 6 bulletin 1262 which gives the following facts: "In the United States in 1919 one mother died for every 135 babies born, and every eleventh baby born died before he was a year old. That these rates are excessive is shown in 'Save the Youngest', a bulletin issued by the U. S. Department of Labor through the Children's Bureau, and just revised to compare the latest rates for the United States with those of foreign countries. Six countries are shown to have a lower infant mortality and 16 in a group of 17, a lower maternal mortality, than the United States. Not only do we lose more mothers in proportion to births than practically any

other civilized country, but we apparently lose more on an average each year than the year before. Whereas in other countries there has been a decrease in the death rate from childbirth, the rate at home rose from 6.1 per 1,000 births in 1915 to 6.2 in 1916, 6.6 in 1917 and to 7.4 in 1919. Moreover, in this country there is no appreciable decrease in the proportion of babies who die from causes largely connected with the care and condition of the mother."

LEGAL LIABILITY FOR TRANSMITTING INFECTION. In "Health News", issued by the Department of Public Health, we are told that "Personal responsibility for the transmission of venereal disease has now been upheld in several different phases of both civil and criminal courts" and that in several instances the Supreme Court has upheld the judgment of the lower courts. Twenty states have already adopted laws forbidding persons with venereal diseases to marry, but all twenty do not require medical examination and certification that the applicant is free from venereal disease.

U. S. CIVIL SERVICE EXAMINATIONS. Applications will be received until June 28 for the position of anesthetist to fill a vacancy in Freedman's Hospital, Washington, at a salary of $1,200 per year, plus the increase granted by Congress of $20 a month with board. Vacancies in positions requiring similar qualifications, at this or higher or lower salaries, will be filled from this examination. Specify Form 1312 when making application for examination. Positions for Dental Laboratory Mechanics at salaries ranging from $900 to $2,400 a year, with the perquisites incident to the positions. Form 2356 necessary in making applications, which will be received up to August 1. The positions of Roentgenologist, from Associate to Junior grades, open for applications until August 1, under Form 1312, paying salaries according to rank. Applications for Reconstruction Aide will be received until further notice. Form 1312 is also used for application for this position.

THE ONE HUNDRED AND FIFTY-FIFTH annual meeting of the Medical Society of New Jersey was held June 14, 15 and 16, at Chelsea Hotel, Atlantic City. An interesting program was observed and everything possible was done to make the meeting a memorable one.

THE SHREVEPORT MEDICAL SOCIETY will hold its next meeting at the Charity Hospital, Shreveport, Louisiana, on July 5.

The following papers will be presented: *Indications for Spectacles and Their Action in General,* by Dr. I. Henry Smith; with Dr. J. L. Scales to open the discussion; *Diagnosis and Treatment of Diseases of Accessory Sinuses,* by Dr. Allen Moise, with Drs. Pope Oden and O. B. Hicks to open the discussion.

Bequests to Universities. The North Carolina Legislature has granted the University of North Carolina $925,000 as a two-year maintenance fund and $1,490,000 for permanent improvements for two years. The College of Agriculture and the College of Veterinary Medicine of Cornell University will receive approximately $1,350,000 from the State as a consequence of the appropriation bill signed by the governor. Tulane University, through its Endowment Fund Campaign, and from other sources interested in its welfare, will receive an amount of over four million dollars when all funds have been collected. Vanderbilt Medical School gets $3,000,000 to be added to the $4,000,000 appropriation in 1919.

The Iberia Parish Medical Society was recently formed when a meeting was held at Iberia for this purpose, at which the President of the State Medical Society, Dr. Homer Dupuy, of New Orleans, and Dr. F. T. Gouaux, of Lockport, councilor of the third congressional district of the State Society addressed the new organization. The officers elected were Dr. G. J. Sabatier, New Iberia, President, and Dr. W. F. Carstens, Secretary-Treasurer.

London Hospital Produces Sterile Surgical Catgut. Surgical catgut, which it is claimed is perfectly sterile has been tried out for nearly a year at the London Hospital and found to be satisfactory. As this catgut is now produced in much larger quantities that the needs of the hospital demand, it is placed on the market. This catgut is made in the hospital from sheep intestines which have been thoroly cleansed by women and the mesenteric rejected by a worker who slits the gut in three strips, after which the fat and adhesive matter are scraped away. These strips are then thoroly sterilized and twisted on a loom to make the different thicknesses required for surgical work, after which the gut is hardened and packed in lengths of 5 feet in air-tight glass tubes containing an antiseptic.

A Newly Equipped Medical School has been established at Hanoi, the capital of French Indo-China and at present has 150 students under the direction of Dr. Yersin, the discoverer of

the plague bacillus. The five year medical course has been put in effect and following this the students will be expected to spend a year in the Medical School of the University of Paris, at which they will complete their clinical instruction and their laboratory work, together with special courses elective. .

THE ARKANSAS STATE MEDICAL SOCIETY held its annual meeting at Hot Springs May 2-5 and elected the following officers for the ensuing year: President, Dr. C. H. Cargile, Bentonville; First Vice President, Dr. Don Smith, Mount Hope; Second Vice President, Dr. A. W. Elton, Newport; Third Vice President, Dr. J. O. Rush, Forrest City; Secretary, Dr. W. R. Bathurst, Little Rock; Treasurer, Dr. Saxton of Little Rock.

THE STATE MEDICAL ASSOCIATION OF TEXAS, at its annual meeting held May 10-12, elected the following officers to serve for the next year: President, Dr. Joseph Becton, Greenville; Vice Presidents, Dr. C. E. Durham, Hico; Dr. W. Meyers, Seguin; and Dr. S. J. Wilson, of Fort Worth; Secretary-Treasurer, Dr. H. Taylor, of Fort Worth.

PERSONALS: The Reverend Arlo Ayres Brown has been elected president of the University of Chattanooga and has accepted the position.

The Staff of the late Dr. E. H. Martin will continue the Martin Clinic with the following personnel: Dr. E. A. Purdum, Dr. W. G. Klugh. Dr. W. F. Porter, Dr. T. S. Lorton, Dr. C. W. Jennings, Dr. W. J. Ford and Dr. C. W. Abel. Their offices are in the Dugan-Stewart Building, Hot Springs, Ark.

Drs. Lucien A. Fortier and Tracy T. Gately announce the opening of their offices in the Whitney Central Building, New Orleans, with a practice limited to radiology.

Dr. Seale Harris, of Birmingham, has been appointed head of the General Gorgas Memorial Commission by President Denny of the University of Alabama.

Dr. J. B. Harney, formerly of Charity Hospital, New Orleans, in the X-ray Department, is now connected with the Providence Infirmary Laboratory, Mobile, Alabama.

Dr. S. C. Lyons, after completion of a two years internship at the Charity Hospital, New Orleans, has gone to Rochester, Minnesota, for research study and work with the Mayo Foundation.

All the recent graduates of the School of Medicine of Tulane University are well placed in intern positions in the large hospitals throughout the country, as well as in some of the smaller hospitals. The Charity Hospital and Touro Infirmary, as well as the Presbyterian Hospital, in New Orleans, each have received their quota from the class of 1921.

REMOVALS: Dr. H. A. Gabert, from New Orleans to Mandeville, La.

Dr. F. R. Gomila, from No. 516 Macheca Building to No. 626 Maison Blanche Building.

Dr. E. G. Calvert, from Monroe to West Monroe, La.

Dr. W. L. Fitzgerald, from No. 1002 Broadway to No. 496 Audubon Street.

Dr. V. L. Sandifer, from Mansfield to Grand Cane, La.

BULLETIN OF THE LOUISIANA STATE MEDICAL SOCIETY.

By P. T. TALBOT, M. D., Secy-Treas.

We are just now getting out from the accumulation of work as the result of our Forty-First Annual Meeting, held in New Orleans, April 19, 20 and 21.

From past records the enrollment at this meeting of five-hundred and thirty-six represents the largest attendance at any of our previous meetings. I feel certain that I voice the sentiment of every one in a position to judge, that both from the standpoint of numbers and scientific production this gathering was the best in our history. Certainly from the enthusiasm and interest manifested at this meeting each and every one seemed to enjoy the special opportunities offered.

We regret very much to see the little response, however, to the course of Post-Graduate work offered to its members by the Society. Only twelve of the membership availed themselves of this privilege. Whether the Executive Committee will feel the necessity for such a section of the program at its next meeting is entirely uncertain and will depend upon the interest displayed before the next annual meeting. If our members desire such a course it is up to each to make such a

want known to the proper officials. In order that this work be kept up there must be shown a desire for same.

While we therefore feel especially proud of the showing made at our recent meeting we have begun to put the irons in the fire to make the next the equal of, if not better than, the one just completed. As you are no doubt aware this next meeting will be held in the illustrious City of ALEXANDRIA, on April 11, 12 and 13, 1922.

Just a bit of information. Some of our membership may not be acquainted with the fact that the Rapides Parish Medical Society represents one of the strongest component parts of our State Organization and has always, in the past, proven equal to any task undertaken. The Rapides Parish Medical Society has always been prominent in medical work, coming to the front whenever any requests were made upon organized medicine. So, each and every one of us may look forward with unusual interest to having the honor of being entertained by this wide-awake organization. With this unusually attractive location and with all the forces at work that the society can command, we may look forward to a grand time at our next annual meeting. From this you may gather that we are not yet satisfied with what we have done but are determined to do better.

It is indeed a regrettable fact to report that although the State Medical Society, with every influence it could command, under the leadership of our past President, Dr. Homer Dupuy, in co-operation with our House of Delegates and Executive Committee, made an attempt before the Constitutional Convention to have the physician's license tax repealed, an amendment offered with this object in view was tabled.

We would appreciate, very much, some expression from the doctors throughout the State concerning their attitude towards this matter. The Louisiana State Medical Society sent representatives to Baton Rouge; the Councilors throughout the State used their influence with the different individual members of the Constitutional Convention; every official of the State Medical Society, especially our past President, Dr. Homer Dupuy,

used every known manner to present fairly the claims of the doctors before the Constitutional Convention, and at a recent meeting of the Executive Committee it was requested that the Secretary-Treasurer canvass every member of the Constitutional Convention, presenting argument for the repeal of the Physician's License Tax—all of this, as you may judge, was of no avail and the members of the Constitutional Convention tabled an amendment without even presenting argument for or against the proposed amendment.

So, another opportunity has been lost, and the only thing left for us is to gather the facts and try to understand why such a defeat occurred,—then we may be able to use this in the future if such an opportunity presents itself.

The Executive Committee of the Louisiana State Medical Society met, May 19, 1921, and transacted the usual routine business, the principal of which was the selecting of the dates of the next annual meeting—April 11th, 12th and 13th, 1922.

At this recent meeting special resolutions of thanks were extended the New Orleans Medical and Surgical Journal for their efforts and co-operation in making the last annual meeting of the Louisiana State Medical Society, such a success.

BOOK REVIEWS AND NOTICES.

All new publications sent to the JOURNAL will be appreciated and will invariably be promptly acknowledged under the heading of "Publications Received." While it will be the aim of the JOURNAL to review as many of the works accepted as possible, the editors will be guided by the space available and the merit of respective publications. The acceptance of a book implies no obligation to review.

Diagnosis and Treatment of Brain Injuries: By William Sharpe, M. D., Prof. of Neurologic Surgery, New York Polyclinic. Philadelphia and London, J. B. Lippincott Company, 1920.

This book is largely a review and critical study of brain injuries coming under the care and treatment of Dr. Sharpe. In this field he has had an unusually rich experience which qualifies him to write authoritatively on this subject.

The book is divided into three parts. Part 1 deals with recent advances in the diagnosis and treatment of brain injuries. This part contains a clear presentation of the indications and contraindications for operation in cranial injuries. A careful description of the technic of typical operations is given, particularly thorough is the operation of subtemporal decompression. Many important diagnostic points are carefully brought out in the text; he particularly emphasizes the use of the ophthalmoscope and spinal fluid manometer; by these means the trouble is detected early, and the operation

should not wait for choked disc but should be guided by the earlier signs, such as dilatation of the veins and blurring of the disc margins, as sufficient evidence of dangerous pressure when taken in conjunction with the spinal fluid manometer determinations.

He emphasizes the point that in deciding whether to operate or not it is not a question of "is there a fracture of the skull, but are there symptoms of a threatening increase of intracranial pressure?"

On some points Sharpe is at variance with the teachings of others gained through war experience, but these are for the most part small details and his experience of 487 adult cases with 155 operations qualifies him to speak with some authority and to entertain a somewhat different view.

Part II deals with acute and chronic brain injuries in adults.

Part III with acute and chronic brain injuries in children and new born.

There are some paragraphs and sentences in which the meaning is not quite clear, due often to the unusual length of the sentences. This should have been corrected by careful editing.

The index while thorough seems clumsy and requires quite a little study before one can find what is wanted. Some illustrations are quite excellent, but there are many which attempt to show the detailed steps of an operation in which little can be made out but a bunch of forceps and a few towels. There is very little in the index to guide one to typical cases of epidural hemorrhage with the classical symptoms. In such a large number of cases one would expect that typical cases would be given more prominence. There is also very little on hydrocephalus and only one slight reference to tuberculous menigitis, though both conditions can follow trauma. Tumors and other diseased conditions are not dealt with as the book is confined exclusively to injuries, but one or two cases are recorded in which tumors complicate brain injuries.

While there are some few things to criticize they are far outweighed by many more to admire and praise. The book should find a large field of usefulness and should be upon the shelves in the libraries of all general surgeons, emergency, industrial and railroad hospitals. ALLEN.

Collected Papers of the Mayo Clinic, Rochester, Minn.: Edited by Mrs. M. H. Mellish. Volume XI. W. B. Saunders Co., Philadelphia and London, 1920.

This volume, which is a collection of papers by the staff of the Mayo Clinic, is quite in keeping with its predecessor both in the quality and variety of the papers presented as well as in the typographical and pictorial excellence. ALLEN.

Diseases of the Nose and Throat, by Hebert Tilley, B. S. (Lond.), F. R. C. S. (Eng.). Paul B. Hoeber, New York, 1920.

Dr. Tilley has added to the list of excellent text-books on diseases of the nose and throat. The present edition contains much new matter that brings his work up to the most recent state of our knowledge on the subject. One of the most striking features of the work is its wealth of good illustrations. These play a very important part in making clear the technic of intranasal surgery, and stamp the work as one of a practical character. The present edition differs from its predecessors in the additions and elaborations of surgical technic. There is a more elaborate description of operations on the frontal sinus, enucleation of the tonsils, and endoscopy. New chapters treat of affections of the trachea, intranasal dacryocystotomy, and the intranasal surgery of pituitary tumors. It happens not infrequently that the success of a fault-

less surgical operation is jeopardized by insufficient care in the after-treatment. Dr. Tilley realizes the importance of this subject and gives it all the attention it demands.

It is not necessary to give a summary of the contents of Dr. Tilley's work, for that would be equivalent to giving a synopsis of the entire medical and surgical affections of the nose and throat.

The book is the fruit of over twenty years' work in these branches, by a man who has sifted in his own mind, all that was worth trying in his particular domain. This vast amount of useful knowledge is systematically arranged and set forth in language of unexceptionable clearness and directness. We can safely predict for Dr. Tilley's work continuance of the professional favor which it has so long enjoyed. McSHANE.

The Essentials of Histology, by Sir Edward S. Schafer, F. R. S. Lee & Febiger, Philadelphia and New York, 1920.

This text is a very replete manual for student work and is not intended as a full reference text in histology for which later purpose the author has written "A Text Book for Microscopic Anatomy." It is a concise, practical book well arranged in fifty lessons and has very many good illustrations which are so essential in the study of histology. W. H. HARRIS.

Ziegler's General Pathology, by Douglas Symmers, M. D. Wm. Wood & Co., New York, 1921.

While the continuation of Prof. Ziegler's original text in translated form is praiseworthy, many omissions are in evidence and few if any additions are supplied. While a general alphabetical index is present in the end of the book, no table of contents is given in front. Thinking this might be an error in the printer's construction of the individual book, other copies were examined but none contained a table of contents.

The references to literature that are given are almost entirely those dating previous to 1910 and while valuable, omit many later important pathological observations.

The effect of various pathogenic organisms upon the tissues are briefly described, but little of the general pathological processes or organo-pathology is given while the actual bacteriology is dwelt upon.

The illustrations are flat and of the older form.

W. H. HARRIS.

PUBLICATIONS RECEIVED.

C. V. MOSBY COMPANY, St. Louis

Tuberculosis and How To Combat It, by Francis M. Pottenger, A. M., M. D., LL. D., F. A. C. P.

Physical Diagnosis, by W. D. Rose, M. D., Second Edition.

Practical Chemical Analysis of Blood, by Victor Caryl Meyers, M. A., Ph. D.

F. A. DAVIS COMPANY, Philadelphia.

Operative Surgery, by J. J. McGrath, M. D., F. A. C. S., Sixth edition, revised.

Rational Treatment of Pulmonary Tuberculosis, by Charles Sabourin, M. D.

Eye, Ear, Nose and Throat Nursing, by A. Edward Davis, A. M., M. D., and Beaman Douglas, M. D. Second edition, revised.

The New Pocket Medical Formulary, by William E. Fitch, M. D. Third edition, revised.

Handbook of Electrotherapy, by Burton Baker Grover, M. D.

J. B. LIPPINCOTT COMPANY, Philadelphia & London.

Fractures, by John B. Roberts, A. M., M. D., F. A. C. S., and James A. Kelly, A. M., M. D. Second edition, revised.

The Principles of Immunology, by Howard T. Karsner, M. D., and Enrique E. Ecker, Ph. D.

Gynecology, by Brooke M. Anspach, M. D.

P. BLAKISTON'S SON & COMPANY, Philadelphia.

Radiant Energy and the Ophthalmic Lens, by Frederick Booth.

Compend of Human Physiology, by Albert P. Brubaker, A. M., M. D., Fifteenth edition.

A Manual of Surgery, by Francis T. Stewart, M. D., Fifth edition.

WILLIAM WOOD & COMPANY, New York.

Manson's Tropical Diseases, by Philip H. Manson-Bahr, D. S. O., M. A., M. D. (D. T. M. and H.) Cantab., M. R. C. P. London, Seventh edition.

THE MACMILLAN COMPANY, New York.

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MORTUARY REPORT OF NEW ORLEANS.

Computed from the Monthly Report of the Board of Health of the City of New Orleans, for May, 1921.

CAUSE.	White.	Colored.	Total
Typhoid Fever	3	2	5
Intermittent Fever (Malarial Cachexia)			
Smallpox	4	1	5
Measles	1		1
Scarlet Fever			
Whooping Cough	3	1	4
Diphtheria and Croup			
Influenza		1	1
Cholera Nostras			
Pyemia and Septicemia	1	1	2
Tuberculosis	31	33	64
Cancer	25	13	38
Rheumatism and Gout	3	2	5
Diabetes	4	1	5
Alcoholism		1	1
Encephalitis and Meningitis	2	4	6
Locomotor Ataxia			
Congestion, Hemorrhage and Softening of Brain	26	11	37
Paralysis	3		3
Convulsions of Infancy			
Other Diseases of Infancy	16	10	26
Tetanus		3	3
Other Nervous Diseases	3	2	5
Heart Diseases	54	25	79
Bronchitis	3	1	4
Pneumonia and Broncho-Pneumonia	22	29	51
Other Respiratory Diseases		2	2
Ulcer of Stomach	1	1	2
Other Diseases of Stomach	3	2	5
Diarrhea, Dysentery and Enteritis	13	9	22
Hernia, Intestinal Obstruction	2	3	5
Cirrhosis of Liver	2	5	7
Other Diseases of the Liver	2	2	4
Simple Peritonitis			
Appendicitis	5	3	8
Bright's Disease	16	11	27
Other Genito-Urinary Diseases	6	7	13
Puerperal Diseases	7	4	11
Senile Debility	2	1	3
Suicide	7		7
Injuries	25	12	37
All Other Causes	37	16	53
Total	332	219	551

Still-born Children—White, 16; colored, 20; total, 36.
Population of City (estimated)—White, 290,000; colored, 110,000; total, 400,000.
Death Rate per 1000 per annum for Month—White, 13.74; colored, 23.89; total, 16.53. Non-residents excluded, 13.95.

METEOROLOGIC SUMMARY (U. S. Weather Bureau).

Mean atmospheric pressure ..... 30.
Mean temperature ..... 74.
Total precipitation ..... 1.61 inches
Prevailing direction of wind, northeast.